# THE STATE OF OUR ENVIRONMENT

*COMMONWEALTH OF MASSACHUSETTS*

*EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS*

UPDATE 2001

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE DEPARTMENT
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ARGEO PAUL CELLUCCI
GOVERNOR

JANE SWIFT
LIEUTENANT GOVERNOR

Earth Day, 2001

Dear Friends of the Environment:

We are pleased to present to you the *The State of Our Environment Update 2001*. The Cellucci-Swift Administration continues to make great progress in our goal of protecting and enhancing the state's fields and forests, mountains and coastlines, and cities and towns.

This update describes some of the most important actions that Massachusetts has taken in the past year to protect our environment. We have signed into law the Community Preservation Act, created the Commonwealth's first Bioreserve, and launched a Mercury Elimination Strategy.

For us to continue setting and achieving environmental goals like these, we need the involvement of concerned citizens. The information contained in *The State of Our Environment Update 2001* is meant to serve as a call to action. With your help, we can continue to preserve and restore the very special character of our Commonwealth's environment.

Sincerely,

Argeo Paul Cellucci

Jane Swift

# 1. AN INTRODUCTION FROM SECRETARY BOB DURAND.

Photo courtesy of the Boston Globe

One year ago I released *The State of Our Environment 2000* on behalf of Governor Paul Cellucci, Lieutenant Governor Jane Swift and the Executive Office of Environmental Affairs (EOEA). The report, the first comprehensive study of the Massachusetts environment in ten years, provided baseline information and focused on key policy issues, in a manner that I hope you found interesting and thought provoking. To date we have distributed 10,000 copies of the report to citizens and organizations throughout the state.

This *Update 2001* focuses on specific environmental advances and initiatives over the past year. Within a similar structure as last year's report, each chapter highlights one area of particular importance. In the Appendix, we describe the progress we have made against the full set of goals that we set for ourselves last year, and we identify some new issues to work on in the year ahead.

All of EOEA's efforts to protect open space, water resources, and wildlife revolve around reversing patterns of sprawl development, and redirecting investment and growth into our city and town centers. Furthering this goal, the most significant environmental event in Massachusetts during the last year was the passage of the Community Preservation Act. This bill, which I sponsored as a legislator and supported for more than 15 years, provides the tools for a community to identify and protect its own unique character. Now all 351 towns and cities in Massachusetts can set aside funds to protect open space, promote affordable housing, and preserve historic resources.

The Community Preservation Act is only part of EOEA's Community Preservation Initiative. By this summer, EOEA will have provided every city and town in Massachusetts with a buildout analysis showing the potential impacts of unguided growth. To address the concerns raised by the buildout analyses, EOEA and other state agencies are providing much needed funds for local Community Development Plans.

Comprehensive planning is particularly critical along our coastline, a resource shared by all Massachusetts citizens. In Hull, Salem, and South Boston, I approved new municipal harbor plans in 2000. The plans provide blueprints for these communities to enhance public use of their waterfronts.

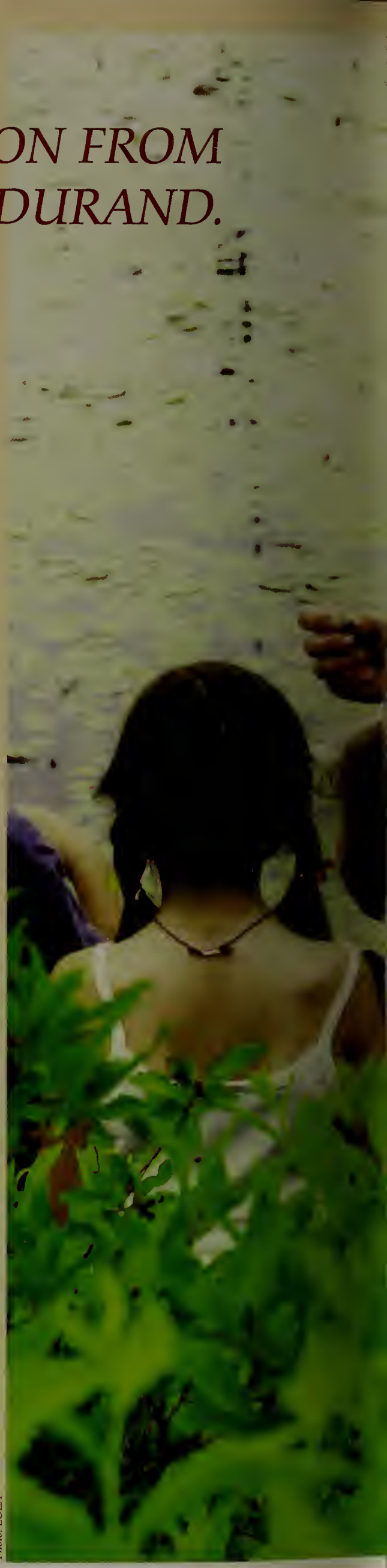


Photo: EOEA

# INTRODUCTION

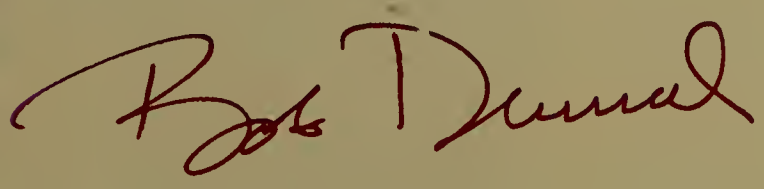
I firmly believe that good information is essential to environmental progress. Education leads to action. For this reason, last June Harvard scientist E.O. Wilson and I helped lead the nation's first "Biodiversity Days." Over 15,000 citizens from communities throughout southeastern Massachusetts fanned out across woods, marshes, and fields to document and record more than 2,800 species of animals and plants. Biodiversity Days were such a great success that this June we will expand them to cover the entire state.

To protect the Commonwealth's rich biodiversity, we have permanently set aside 75,000 acres of open space over the past two years. In Fall River we created the first "bioreserve" in Massachusetts: 14,000 acres of land assembled by public agencies and nonprofit organizations to preserve distinct habitats.

We have also made great strides in correcting the mistakes of the past. EOEA and the state Department of Public Health launched a new Mercury Elimination Strategy to eliminate the threat that this highly toxic substance poses to children and other vulnerable citizens. In August, the Environmental Protection Agency approved our submittal of Buzzards Bay as a No Discharge Area for boat sewage. In December, I issued EOEA's draft Environmental Justice Policy, based on the principle that "all people have a right to be protected from environmental pollution and to a clean and healthful environment."

But the past year has seen setbacks, as well as successes. While we work to improve our economic prosperity, we must do so in an environmentally sound manner, paying close attention to land-use decisions and recycling. Even as we protect new areas of land, many of our existing parks and open spaces are under siege. I am particularly alarmed by the increasing trend to destroy urban parks to construct schools and other public buildings. As we add additional acres to our century-old state forests and parks system, we must provide for the necessary maintenance and management systems to preserve these special places for future generations. These are not easy tasks, but by working together we can all improve the state of our environment.

We have more than 3,500 employees within EOEA and the state environmental agencies working every day on projects that improve the environment. In all of our programs, we rely on local officials who are often the crucial decision-makers, and on the active participation of citizens like you. I hope that this *State of Our Environment Update 2001* will inspire you to continue to play an active role in preserving, protecting, and restoring the Massachusetts environment.



2.

# COMMUNITY PRESERVATION

EOEA

***THE STATE***

***OF OUR***

***CITIES AND TOWNS***

# COMMUNITY PRESERVATION: FIGHTING SPRAWL WITH LANDMARK LEGISLATION

*"With open spaces quickly being developed and historic resources in disrepair, the Community Preservation Act provides a reliable funding source to preserve the unique character of our town. North Andover is undergoing unprecedented growth that is driving up taxes and straining Town finances. The Act allows us to manage the impact of development, and protect the rural fabric which enhances our quality of life."*

*– Felipe Schwarz,*
*North Andover Resident*

# 2.

On September 14, 2000, with the stroke of a pen, Governor Paul Cellucci and Lieutenant Governor Jane Swift signed into law the Community Preservation Act (CPA), culminating fifteen years of hard work by environmentalists, historic preservationists, housing advocates, realtors, legislators, and municipal officials. Before a large crowd gathered at the Robert Treat Paine Estate in Waltham, Governor Cellucci, Lieutenant Governor Swift, Environmental Affairs Secretary Bob Durand, and many others who were critical to the successful passage of the CPA launched a new era for improving the quality of life in Massachusetts – community by community, watershed by watershed.

Shortly after the CPA became law, The Trust for Public Land, a national nonprofit organization, included this legislation as one of the nation's seven best efforts to combat the effects of sprawl. By combining local decision-making and public involvement with a common goal to reduce the impacts of sprawl, the CPA provides all 351 Massachusetts cities and towns with an important tool to identify and protect what is truly unique about each community. It enables a municipality to establish a local fund to protect open space, preserve and restore historic sites, and provide low- and moderate-income housing – key components in determining what our cities and towns will look like in the future.

When it was introduced in 1984 as land bank legislation, the CPA was considered visionary. Originally filed to protect open space, the bill expanded to include historic preservation and housing needs as it progressed through the Legislature. However, the community preservation movement in Massachusetts did not spring up overnight. In fact, its roots go far back in time: to the creation of the first public park in British North

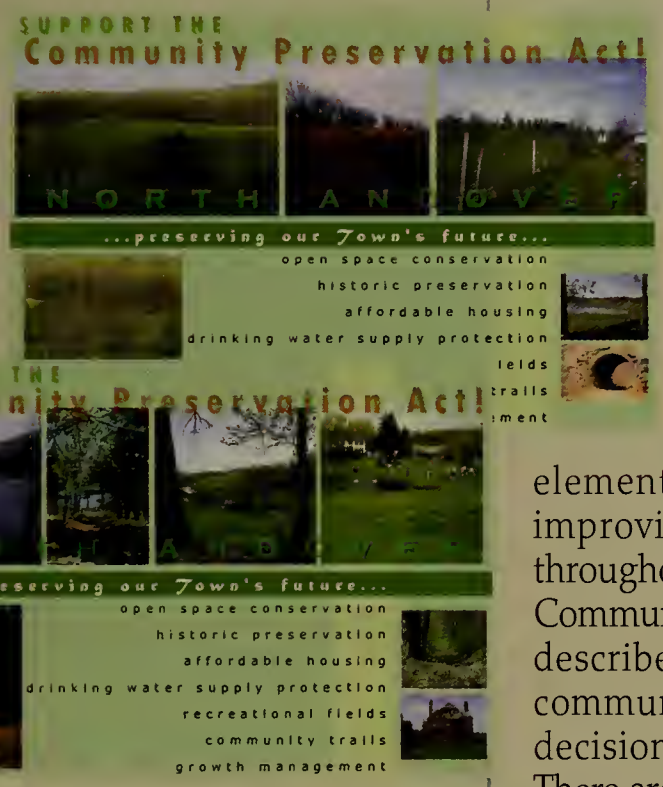
BUILD NOT FOR TODAY ALONE BUT FOR TOMORROW AS WELL

*The Riverway section of the Muddy River, flowing through Boston and Brookline, 1920. A major restoration project for the Muddy River is currently under way.*

*Photo courtesy of the National Park Service, Frederick Law Olmsted National Historic Site.*

*The successful campaign to pass the CPA in North Andover used a mixed outreach approach to educate residents about the Act.*

*Photos courtesy of the Town of North Andover*




America (the Boston Common in 1634); to the efforts – again in Boston – to save the Old South Church from being torn down in 1876; to livable villages and neighborhoods and century-old state park systems; and to a cultural perspective that values the past while it embraces the future.

Under the CPA, municipalities may elect to pass a surcharge on the local property tax, up to a maximum of 3% of the current tax rate. In addition, the state matches a portion of local funds raised through the surcharge. These CPA funds may be used only for open space, historic preservation, or affordable housing, and at least 10% of the funds collected must be spent on each category. While not all 351 communities in Massachusetts may ultimately pass the maximum 3% surcharge, the CPA has the potential of providing up to $225 million each year.

Although the CPA focuses on three components of our built and natural environments that are central to the fabric of our cities and towns, the community preservation movement incorporates other elements as well, all aimed at improving the quality of life throughout Massachusetts. EOEA's Community Preservation Initiative describes a philosophy to help communities make informed decisions about future growth. There are many programs at EOEA and its agencies that fall under this definition -- everything from improving the quality of our air and water to supporting locally-grown produce to preventing pollution and cleaning up hazardous waste. The Community Preservation Initiative ties these activities together and focuses their coordination at the local and intercommunity level.


## *TEAMING UP WITH HIGHER EDUCATION*

*Just as the ink was drying on a cooperative agreement signed by Environmental Affairs Secretary Bob Durand and University of Massachusetts President William Bulger, professional planners, landscape architects, historic preservationists and academics from EOEA and the UMass/Lowell campus were hard at work on ways to promote community preservation strategies. Their chief concern was how to help local decision-makers address issues of sprawl and implement community preservation principles in their communities.*

*Out of this effort was born the Community Preservation Institute, which officially opened on March 28, 2001, at the UMass I-495 Center for Professional Education in Westborough. The inaugural course consisted of seven evening classes addressing issues such as land and natural resource protection, housing, adaptive reuse, transportation, and historic preservation. Scholarships were provided for all twenty-five of the initial participants.*

# 2.

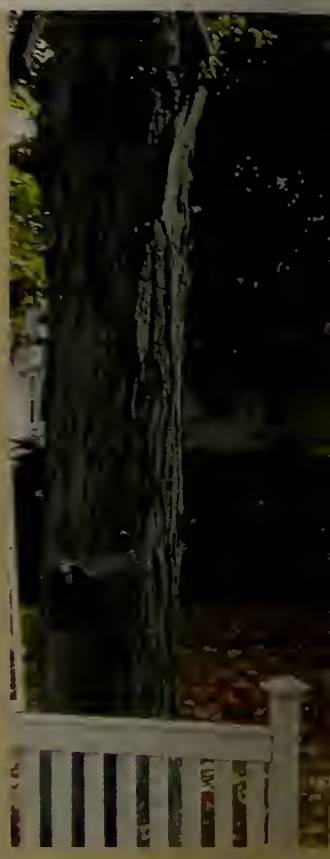
*Governor Paul Cellucci and Lieutenant Governor Jane Swift signed the landmark Community Preservation Act on September 14, 2000, as Secretary Bob Durand, Senator Marc Pacheco, Representative John Rogers and many advocates who tirelessly worked to get the bill passed looked on.*

*Photo: EOEA*

Under the Community Preservation Initiative, EOEA is producing buildout maps and analyses for every Massachusetts municipality. Each buildout analysis projects the maximum total amount of commercial and residential space that can be built under the community's current zoning. Presented at public meetings, these buildout analyses highlight how poorly-planned growth can adversely change a community; they also focus attention on the impacts of full development on water consumption, school children and residential populations, natural resources, and other features of a community or region. These buildout analyses are the first step in a process that leads to Community Development Plans created under Executive Order 418 issued by Governor Cellucci and Lieutenant Governor Swift.

Community Development Plans are designed to empower communities to make informed decisions about their future growth. Executive Order 418 provides up to $30,000 in technical assistance and planning services to each city or town to develop a Community Development Plan. Many communities have already begun to take advantage of this voluntary program funded by EOEA, the Department of Housing and Community Development (DHCD) and the Executive Office of Transportation and Construction (EOTC). The final Plan consists of a GIS-based map that addresses open space, resource protection, housing, economic development and transportation issues. Since growth and development in one community often affects neighboring communities, EOEA, DHCD, EOTC, and the Department of Economic Development (DED) encourage communities to pool their resources and develop intercommunity plans.

Buildout analyses and Community Development Plans graphically show how different forces in a changing world are interrelated. They help initiate mental chain reactions where one issue leads to another issue, which then leads to a third issue and so on.



*The Sawyer House, located in the center of Bolton, was originally built as a ballroom wing for the Hollman Inn. The wing was later salvaged for a private residence and moved to the center of town. In 1970, the owner, Florence Sawyer, deeded the home to the Bolton Historical Society for its use.*

*Photo: EOEA*

*The Executive Office of Environmental Affairs (EOEA) is funding buildout maps and analyses for all 351 cities and towns and presenting these buildouts during their local Board of Selectmen and City Council Meetings. These studies are being provided by the Regional Planning Agencies (RPAs) and will be completed by June 30, 2001.*

*Photo: EOEA*


The whole process raises our awareness of our surroundings. By focusing on what is important at the local level – preserving the municipal fish pier, the old ice house by the Miller field, or the bog out back beyond the high school – each and every town and city in Massachusetts can take control of its future.

Knowing and enjoying what is out there around us is only the first step in a much larger process of preserving our communities. The real test will be how well we integrate community preservation successes at the local level across regions of the state. We need to enhance the separate identity and characteristics of each city and town while strengthening a common value system that recognizes the interrelationships among communities. In this way, we can dramatically improve our quality of life – community by community, watershed by watershed.

*Community Preservation Checklist: A Year of Accomplishments*

✓ *Completed buildout analyses for 248 communities with the remaining 103 analyses to be completed by June 30, 2001, in partnership with the Commonwealth's 13 Regional Planning Agencies.*

✓ *Completed 200 buildout presentations to local Boards of Selectmen and City Councils to explain the buildout project, Community Development Plan Program (Executive Order 418), and the Community Preservation Act.*

✓ *Held a statewide Community Preservation Act Conference with more than 600 attendees and gave an additional 50 presentations to communities explaining the Act.*

✓ *Rolled out a $9 million Community Development Plan Program in partnership with DHCD, EOTC, and DED that included creation and distribution of* Building Vibrant Communities: Linking, Housing, Economic Development, Transportation and the Environment, *a workbook that explains the program and criteria for creating plans.*


✓ *Held 27 major public forums to discuss growth issues and sprawl on individual and intercommunity levels.*

✓ *Introduced Community Preservation Principles that can be found on the EOEA website.*

✓ *Provided training for Regional Planning Agencies to assist them in producing buildout analyses for communities.*

✓ *Worked with North Shore communities to produce conservation subdivision design materials, including a sample Green Neighborhoods bylaw.*

✓ *Developed GIS-based planning tools to help municipalities determine alternative development scenarios.*

✓ *Created the Community Preservation Institute, in partnership with the University of Massachusetts, to help citizens implement community preservation principles in their communities.*

✓ *Updated the state GIS with local land use and zoning information so data can be used by communities and others.*

## EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS WEB PAGE LINK

- www.state.ma.us/envir/communitypreservation.htm
- www.communitypreservation.com

3.

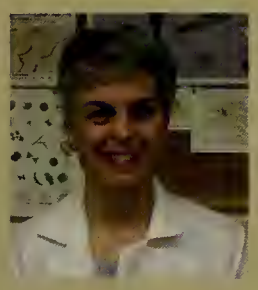
# MANAGING WATERSHEDS

*THE STATE OF OUR*

*RIVERS, LAKES, WETLANDS,*

*AND GROUNDWATER*

# CLEAN WATER: MEETING TOMORROW'S NEEDS TODAY



*"People don't realize that their drinking water is a limited resource, and that we must protect and conserve it to maximize its use. Foxborough understood early on that water and wastewater issues are related and that we can't just ship all our wastewater out of town. If we did, we would be shooting ourselves in the foot."*

*– Joan Sozio, Member,*
*Foxborough*
*Water and Sewer Commissioner*

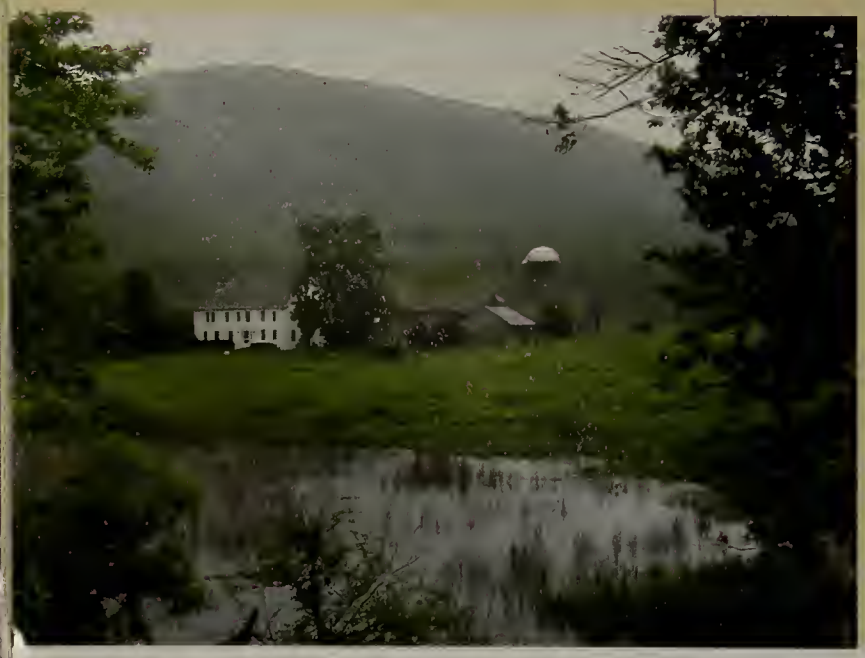
# 3.

Reports are coming in that local watering holes have run dry. There's talk of relieving a water shortage by building a multi-million dollar desalination plant to turn seawater into freshwater. Municipal officials are on the prowl for violators of a water-use ban. This scenario could be taking place in an arid country near the equator or at some future time as a result of global warming. Unfortunately, these are real-life situations happening today in Massachusetts.

You may wonder how a state like Massachusetts could have a water shortage. Mark Twain's ever-ready New England forecast, in which he advises people who don't like the weather to "wait a few minutes" for a change, points to the healthy mixture of fair skies and precipitation that have become the meteorological trademark for the northeast. And while weather patterns have not changed significantly, our water use patterns have. Increasingly, we're faced with a combination of forces involving water use, water pollution, and development that threatens the healthy water supplies and water resources that most of us have taken for granted. When the demand for clean water outstrips the supply or endangers the environment, we must impose limitations on water use.

The need or demand for water is just one of the many forces that affects our water supply. More people require more water and a healthy economy also contributes to increased demand. Many businesses and industries that form the backbone of our local and state economies use large amounts of water for manufacturing, processing, cooling, and bottling.

Over the centuries, we have developed new ways of providing clean water to meet demand, from natural springs to wells, and more recently to major water supply systems that include huge reservoirs, hundreds of miles of tunnels, and a vast network of pipes. We have spent billions of dollars to locate, pump, clean, disinfect, and transport this water, often over great distances from one watershed to another. Not surprisingly, costs rise as uses increase.



Over the last 100 years, public works administrators have created enormous reservoirs in central and southeastern Massachusetts to provide clean water to metropolitan areas. New wells have been dug and rivers diverted for communities, businesses, and households. As the Massachusetts landscape becomes more developed, however, protecting these water supplies and ensuring their purity becomes increasingly difficult, because large buffer zones of open space and treatment facilities are needed to protect water quality for drinking and other uses.

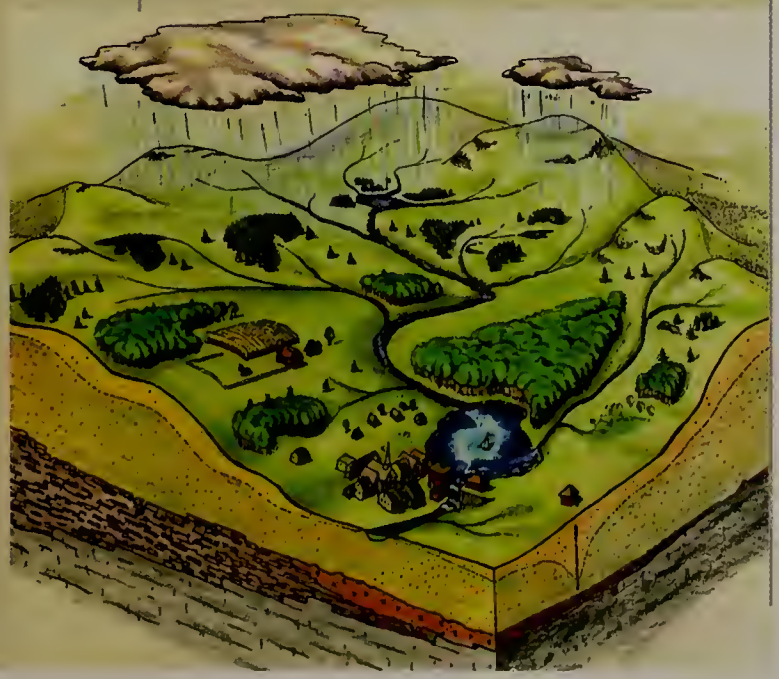
*Quinapoxet River in Holden is a major tributary of the Wachusett reservoir. This stretch of river recently was acquired for watershed protection as part of an 85 acre purchase.*
*Photo: Jim French / MDC*

Water quality is affected by natural sedimentation, runoff from streets, leaching from septic systems or contaminated groundwater, air pollution, and the health of the ecosystems within each watershed. Lakes, ponds, riverways, and natural underground aquifers are all water sources that are susceptible to contaminants, like the gasoline and oil that wash off roadways after a storm. Unless measures are taken to protect each water source, water quality degrades with each new pollutant until the water becomes unsuitable for humans and wildlife.

Water demand, supply, and quality are all closely related to development patterns and use. The single most important factor in this debate is sprawl. As the average amount of developed land for each person in Massachusetts increases, natural water systems become more and more threatened. For example, new houses and roadways result in covering water recharge areas with impervious surfaces, so rain runs off and does not replenish groundwater.

Communities, particularly in suburban areas, use two to three times the average winter water rate in the summer months. This peak demand occurs just when rivers and streams are at their lowest levels, due to less rain, more evaporation, and greater plant needs for water. Municipal and state sewer systems often discharge large quantities of water in watersheds far removed from the withdrawal point, resulting in a net water deficit in the watershed where the water originated. These use patterns and interbasin water transfers have serious impacts on groundwater supplies: for example in the Ipswich River watershed, more than 85% of the water withdrawn is discharged outside the watershed, often causing the Ipswich River itself to run dry.

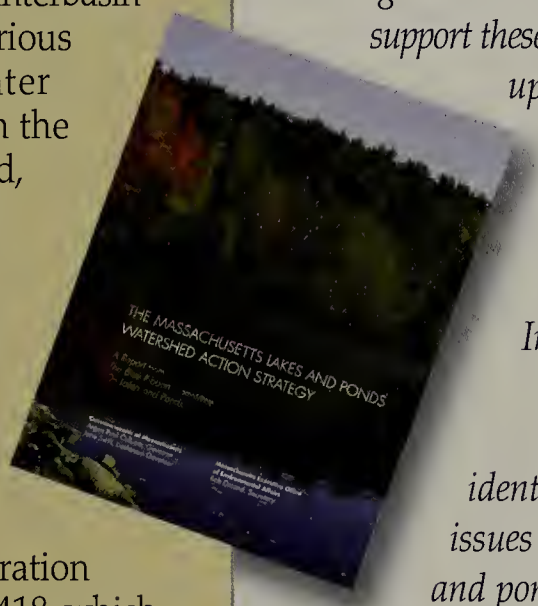
Last year, the Cellucci/Swift administration issued Executive Order 418, which provides communities with the means to develop buildout analyses and maps through Community Development Plans for individual communities and, more importantly, groups of contiguous communities



*A Watershed is a geographic area of land in which all surface and ground water flows downhill to a common point, such as a river, stream, lake, pond, wetland or estuary.*

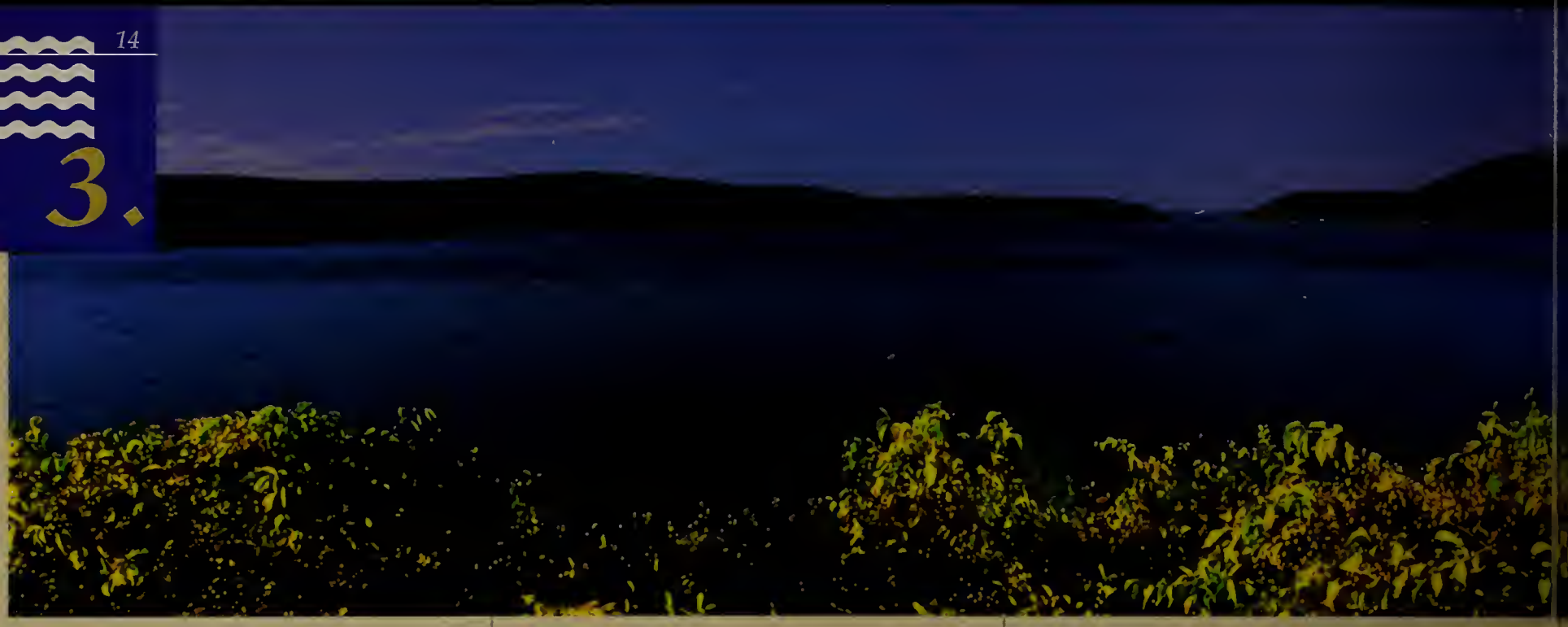
## *A STATEWIDE STRATEGY FOR LAKES AND PONDS*

*In January, 2001, a Blue Ribbon Committee released the* Massachusetts Lakes and Ponds Watershed Action Strategy *to identify immediate actions to improve protection efforts for the more than 3,000 lakes and ponds across the state. The Committee recognized that local stewardship is essential to the long-term protection of lakes and ponds and targeted its recommendations to support these efforts by building upon partnerships developed through the Massachusetts Watershed Initiative (MWI).*




*This strategy identified six principal issues affecting lakes and ponds: water quality, water quantity, biodiversity and habitat, invasive species, dam maintenance or removal, and natural and human uses. To implement the recommendations, EOEA will undertake several protection and restoration projects, expand the Lakes and Ponds grant program at the Department of Environmental Management (DEM), expand the MWI Volunteer Monitoring grant program, develop new guidance materials and training opportunities, and, with the University of Massachusetts, develop a lake and pond classification system to assist local groups in identifying appropriate protection goals.*

# 3.



(see Chapter 2, "Community Preservation"). By combining an area-wide buildout analysis with a calculation of available water supplies and need, intercommunity development plans provide the public with critical information on development, water supplies, and future water demand.

Some intercommunity development planning efforts have already highlighted the potential severity of a water shortage problem. Residents and planners in Franklin and Medway have realized that their groundwater suppliers are located in the same aquifer – a situation that is like having many straws in the same glass. Studies show that this level of water withdrawal is not sustainable over the long run, and these communities must plan how they will meet future demand.

The most important step in securing long-term water supplies is to protect the land above and around water sources and storage areas, such as reservoirs. Undeveloped land acts as a filter for rainwater that seeps through the soil and drains into underground aquifers and surface water bodies. It is an inexpensive, efficient natural system that provides many other benefits to humans and wildlife. If properly managed, natural habitats, passive recreation, and some traditional resource-based industries can all be accommodated on water protection land.

Many water protection lands that surround some of the state's largest reservoirs, such as the Quabbin in Central Massachusetts and the Watuppa in Fall River, form the core of new bioreserves, which protect the integrity of ecosystems with approximately 15,000 acres of protected land (see Chapter 8, "Land Protection"). However, not all water supply systems using reservoirs and wells have these buffer zones. Mapping current and future water withdrawal sources and developing strategies for their protection will be increasingly important as the demand for clean water continues to grow.

But increases in the demand for water do not have to run boundless, and we would be


*Located in northeastern Massachusetts, the Ipswich River Watershed encompasses approximately 155 square miles of land area, and includes all or part of 21 communities, with an estimated watershed population of 160,000 people. During much of late summer and early fall, when evaporation rates and water withdrawals are high, stream flow in the Ipswich River watershed is severely affected, causing the river to flow backwards and sometimes even run dry.*

*Construction on the Quabbin Reservoir began in 1936. This project required the impoundment of the Swift River and the taking of the towns of Dana, Enfield, Greenwich, and Prescott. Filling the Quabbin commenced on August 14, 1939, and was completed in 1946 when water first flowed over the spillway. At the time, the 412 billion-gallon reservoir was the largest man-made reservoir in the world devoted solely to water supply.*

*Photo: Karen J. Dodge/MWRA*

unwise to squander this resource through inefficient or unnecessary use. There are many ways to reduce water demand, through simple changes in home plumbing fixtures to more complex maintenance, repair, and replacement of underground water supply systems. These conservation investments can yield huge quantities of water for use. For example, the Massachusetts Water Resources Authority had been supplying approximately 330 million gallons a day to greater Boston to meet its needs. Through investments in conservation, today water demand is approximately 250 million gallons a day.

Perhaps even more important are daily patterns of personal and industrial water use. Large lawns and landscaping that require constant watering gobble up water supplies when groundwater tables are at their lowest levels. Native plantings and smaller lawns that are shaded by nearby trees are more likely to thrive without help from sprinklers and the ubiquitous garden hose.

Managing water resources is a difficult task. A river may be flooded one month and dry later that year. One community may have high water bills to pay for costly water filtration or be forced to impose a water ban while a neighboring community may rely on open space and natural filtration to provide plentiful amounts of clean water. Knowing how we will provide clean water for our future needs involves a coordinated approach toward land protection, development, and water use.

## *CLEAN WATER CHECKLIST: A COMPREHENSIVE APPROACH*

✓ *Released the* Massachusetts Lakes and Ponds Action Strategy *to support local efforts protecting lakes, ponds and their watersheds.*

✓ *Developed the* Massachusetts Drought Management Plan *to provide the blueprint for how state agencies, working with local and federal partners, will assess and respond to droughts.*

✓ *Developed guidance and outreach on lawn watering conservation to help municipal boards and water suppliers reduce peak water demands.*

✓ *Completed the MWRA's treatment plant on Deer Island, a major milestone in the Boston Harbor Project.*

✓ *Instituted a streamlined water supply permitting process to help communities identify areas that are most likely to provide environmentally sound water supplies.*

✓ *Provided over $3 million for watershed grants and projects to support the Massachusetts Watershed Initiative teams and communities working on priority projects.*

## EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS WEB PAGE LINKS

- www.state.ma.us/envir/mwi/watersheds.htm
- www.mwra.state.ma.us
- www.state.ma.us/dep/brp/dws/dwshome.htm
- www.state.ma.us/dep/brp/wtrm/wtrmhome.htm

4.

# PREVENTING POLLUTION

*FROM REGULATORY COMPLIANCE*

*TO*

*ENVIRONMENTAL STEWARDSHIP*

# MERCURY ELIMINATION: GETTING TO ZERO

*"While not the sole cause of learning disabilities among today's children, mercury is an important contributor and a preventable one. For pregnant women it only takes 7 ounces of tuna, or 1.5 ounces of swordfish, in one week to exceed the safe consumption limit."*

*– Jill Stein, MD,*
*Physicians for Social Responsibility*

4.

Henry David Thoreau, the famous author and naturalist, spent two years living in a small hut at Walden Pond in Concord during the mid-nineteenth century. Thoreau's reflections on the time he spent there helped launch the international environmental movement, and, as a result, Walden Pond is now known around the world as a symbol of our human connection to nature. While at Walden Pond, Thoreau would sometimes row his boat out late at night to the middle of the pond and fish in the moonlight for his next day's meal. "…[S]urrounded sometimes by thousands of small perch and shiners... I drifted in the gentle night breeze, now and then feeling a vibration along the fishing line.... At length you slowly raise, pulling hand over hand, some horned pout squeaking and squirming to the upper air."

Today, the native fish in Walden Pond, and seventy-nine other waterbodies in Massachusetts, must not be eaten because they have elevated levels of mercury. Even more telling, the Department of Public Health has issued a consumption advisory that pregnant women and nursing mothers should not eat freshwater species caught anywhere in the state.

In June, 2000, after months of deliberation by the Mercury Task Force, Massachusetts officials unveiled the state's Zero Mercury Strategy on the shores of Walden Pond. The Zero Mercury Strategy is a coordinated multi-agency effort to target nearly $1 million in resources this year alone to eliminate the use and release of mercury. Mercury is toxic and persistent and makes its way into the food chain through releases into our air and water. It is found in many everyday products including thermometers, thermostats, button cell batteries, and fluorescent light bulbs, and is used in many manufacturing processes, often finding its way into the products themselves. In fact, long ago, mercury was used in the manufacture

*The Massachusetts Zero Mercury Strategy was released July, 2000, on the shores of Walden Pond in Concord. Some species of fish in Walden Pond have elevated levels of mercury as a result of atmospheric deposition, making them unsafe to eat.*

Photo: EOEA

*Students from the Mary E. Curley Middle School and the Dorchester Youth Academy joined in to help stock fish in Jamaica Pond last summer. The Massachusetts Division of Fisheries & Wildlife provided 500 brook, brown, rainbow, and tiger trout and 15 brood-stock salmon weighing up to 20 pounds apiece for the event. All fish provided for the stocking are fit for consumption.*

*Photo: EOEA*

of hats, and its debilitating effects on workers led to the phrase "mad as a hatter."

For many people, the most familiar mercury product is the traditional mercury fever thermometer. Once a staple of the home medicine cabinet, mercury fever thermometers are now recognized as a potential hazard. A mercury spill caused by breaking a thermometer at home may cost over $1,000 to clean up. The environmental impacts from mercury released into the environment from an improperly discarded thermometer can pose a significant threat to wildlife and to humans. To solve this problem, a number of efforts are underway to safely collect and recycle mercury thermometers and replace them with non-mercury alternatives.

## *INVESTING IN NEW TECHNOLOGY TO PREVENT MERCURY RELEASES*

*Reaching our zero mercury goal will require a careful balance between the search for mercury-free products and the need to take action in the short-term to keep mercury now in use out of the wastestream. To be successful, new technologies are needed to remove mercury from our air emissions and wastewater. And Massachusetts is not simply waiting for these new mercury technologies to come to market – we are investing state resources to find them, to test them, and to get them on to the market.*

*Through the Strategic Envirotechnology Partnership (STEP), EOEA partnered with world-renown experts at UMass/ Boston and the Massachusetts Water Resources Authority (MWRA) to pilot several innovative mercury removal technologies for hospital wastewater streams.*

*The MWRA is also evaluating dental amalgam separator technologies. With the support of EOEA and the Massachusetts Dental Society (MDS), this work will help identify immediate and cost-effective opportunities to remove mercury in wastewater from dental offices.*

4.

Last summer, with the help of grants from EOEA, the Town of Burlington initiated a thermometer exchange program. In just one week, the program netted nearly 600 thermometers and 47 pounds of elemental mercury. In November, 2000, the Boston City Council passed an ordinance banning the sale of mercury fever thermometers within city limits.

Health Care Without Harm, a coalition of healthcare professionals, has challenged the nation's largest drugstores to stop selling mercury fever thermometers. To date, fifteen chains have responded with pledges. Later this year, four of the state's largest municipal waste combustors (or incinerators) will be offering thermometer exchanges to at least 67 long-term contract communities as part of the requirements of the Department of Environmental Protection (DEP) Waste Combustor Rule.

Other efforts underway as part of the Waste Combustor Rule include a collection program for used thermostats, financial assistance for municipalities to reimburse mercury collection costs, and an education campaign on mercury products. These programs, along with the recently completed retrofitting of incinerators with new equipment to comply with DEP's new mercury emission standards, are expected to reduce the state's total mercury emissions by about 50 percent by 2003.

Hospitals in the Massachusetts Water Resources Authority (MWRA) sewer district have made tremendous strides toward cutting mercury discharges through a combination of reduced use and filtration. Dentists who use mercury in silver amalgam fillings have been taking advantage of a cooperative agreement between DEP and the Massachusetts Dental Society, to collect and recycle leftover stocks of bulk elemental mercury. In the first two months alone, 1,200 pounds of mercury were collected. MWRA is also working with the Massachusetts Dental Society to investigate new technologies to eliminate mercury in the waste-water stream from hospitals and dental facilities, and the results are promising. To underscore the importance of these efforts, EOEA signed a memorandum of understanding with the



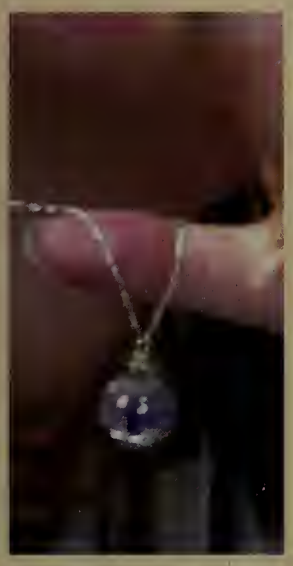
*Mercury is found in many products such as thermometers, thermostats, fluorescent lighting, electric switches, relays, and even jewelry. Products containing mercury should never be thrown away with regular trash, but treated as hazardous waste.*

*Photos: EOEA*

Massachusetts Dental Society to promote the use of these technologies.

While these projects are a promising start, the sheer volume of products containing mercury continues to pose a tremendous challenge to our efforts to eliminate mercury. The Cellucci/ Swift administration is planning to file a comprehensive mercury products bill based on model legislation prepared for the Conference of New England Governors and Eastern Canadian Premiers to further address the problem of elevated mercury levels in northeastern North America.

"What is the good of having a nice house without a decent planet to put it on?" Thoreau once asked, and we would do well to listen to this advice. Eliminating toxic substances like mercury must remain a top priority for all of us. And even Thoreau – often critical of government in general – would probably think we were on the right track.



*Todd Dresser and Jim Giordani of the Town of Burlington Board of Health with a mercury product display.*

*Photos: EOEA*

*Mercury Checklist: Getting to Zero*

✓ *The Massachusetts Zero Mercury Strategy was released – a multi-media, multi-agency strategy to virtually eliminate the use and release of mercury in Massachusetts.*

✓ *Municipal waste combustors came into compliance with the Municipal Waste Combustor Rule, cutting mercury emissions by 85 percent.*

✓ *New DEP regulations for the oldest power plants will require significant reductions in mercury.*

✓ *DEP provided storage sheds to municipalities for the collection of mercury products.*

✓ *EOEA signed a memorandum of understanding with the Massachusetts Dental Society to eliminate releases of mercury from dental offices.*

✓ *State industrial reporting requirements for mercury use were lowered from a minimum reporting requirement of 10,000 pounds to 10 pounds per year.*

✓ *The Cellucci/Swift administration announced its plan to file comprehensive mercury products legislation.*

EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS WEB PAGE LINKS

- www.state.ma.us/envir/mercury.htm

5.

# AIR POLLUTION AND CLIMATE CHANGE

## *THE STATE OF OUR AIR*

# ENVIRONMENTAL JUSTICE

*"To many people the words environmental and justice do not sit easily together. At best, the word coupling evokes a vague memory of some distant news report on disproportionate toxic risk among people of color and low-income communities. At worst, the combination fails to register a signal. But residents living near or in degraded environments know exactly what environmental justice is, even if they do not name it as such."*

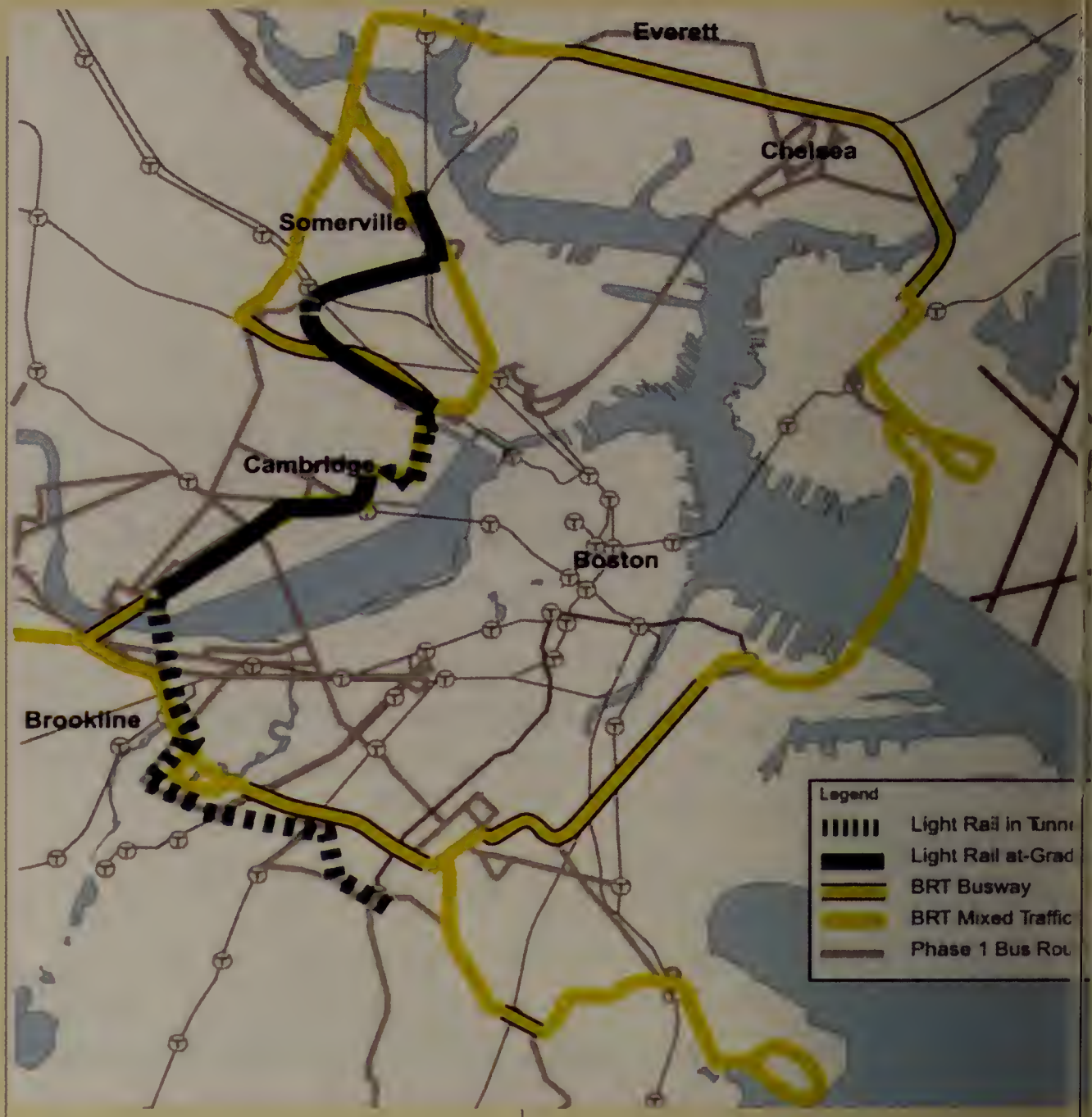
*– Professor Julian Agyeman, Tufts University and member of the Massachusetts Environmental Justice Advisory Committee.*

# 5.

Ask the person on the street about justice today and you're likely to get a wide variety of answers. Few people would probably have much to say about environmental justice – they might not even be familiar with the term.

Environmental justice embodies the notion that no segment of the population should be subject to a disproportionate burden of environmental impacts or receive a disproportionate allocation of environmental benefits. It is a vision toward which our actions and decisions should be focused rather than a quantifiable goal, but is no less important for being a guiding principle. On December 19, 2000, Environmental Affairs Secretary Bob Durand released for public comment a draft environmental justice policy that will provide a pivotal framework for all actions taken by EOEA.

The development of this draft environmental justice policy was guided by the Massachusetts Environmental Justice Advisory Committee (MEJAC), a multi-stakeholder group. MEJAC members represented environmental and community-based organizations, industry, the faith community, and academia. Their expertise was critical to setting aggressive environmental justice goals for EOEA agencies that will result in measurable social and environmental change.




*THE URBAN RING*

*In Greater Boston, the radial "hub and spoke" nature of local roads, transit lines and bus routes means travelers often go out of their way – usually downtown – to reach destinations outside of Boston's core. For nearly a century, residents and transportation planners have envisioned a circumferential system to connect the spokes of the Hub. The purpose of the MBTA's Urban Ring project is to begin connecting radial transit lines and bus routes in the communities of Boston, Brookline, Cambridge, Chelsea, Everett and Somerville. The Urban Ring will serve approximately 170,000 riders per day, provide important connections between neighborhoods and existing and new job centers, ease subway system overcrowding, and save commuters approximately 40,000 hours of travel time a day. The map above illustrates one of a number of alternatives – from bus rapid transit to heavy rail – that are being explored as part of the Urban Ring.*

*Map: MBTA*

While EOEA's draft environmental justice policy provides a consistent approach to this issue for EOEA and its agencies, there are many practical environmental justice initiatives already in progress. Although clean air is widely seen as a common public health issue, its greatest harmful impacts are usually felt in urban communities, particularly those with transportation hubs or arteries that handle traffic from buses, trains, automobiles, and planes. Over the past few years, EOEA has worked with state transportation agencies and neighborhood groups to reduce emissions from transportation in urban areas, where particulate matter and noxious fumes can exacerbate asthma and other respiratory illnesses.

In last year's *The State of Our Environment* report, we highlighted the work done by a group of teenagers to reduce emissions in the Dudley Square area of Boston by convincing MBTA officials to limit the time bus drivers could let their engines idle while waiting at the station. But idling diesel engines are only part of a much larger problem: too many engines making too much pollution on our roadways, our railways, our waterways, and at our airports. EOEA has continued to work with groups like Alternatives for Communities and Environment (ACE) to look at both the obvious sources of this pollution and fundamental public policy issues that affect air quality.

EOEA has reflected this approach as a priority in many of its decisions on transportation projects. In September, 2000, the Department of Environmental Protection renewed and expanded the transit commitments that are part of the Central Artery/Tunnel Project. The resulting agreement provides additional benefits to the urban core. State transportation agencies will clean up the MBTA fleet by introducing 358 alternative fuel buses; retrofitting remaining in-service diesel buses; building the Silver Line, including a transit tunnel to provide seamless connections to the transit system from Roxbury and the South


*The MBTA has ordered 183 compressed natural gas (CNG) buses similar to this one to transition its fleet to cleaner fuels. These buses will be used in transit dependent, urban areas, greatly reducing diesel emissions in these diversely populated neighborhoods.*

*Photo: MBTA*

## *FIELD OF DREAMS: A BROWNFIELD BECOMES A GREENFIELD IN SPRINGFIELD*

*In December 2000, the EOEA Urban Self-Help Program provided a quarter of a million dollars to the City of Springfield for the construction of a new regulation-size soccer field on a remediated industrial site, or brownfield.*

*The cleanup and redevelopment of brownfields is key to the revitalization of urban areas. Putting these properties into productive use for parks or new businesses can benefit a neighborhood by providing recreation opportunities and jobs.*

*This site, the future Plainfield Street Soccer Field, will provide playing fields, trails, and access to eight acres of park space for the surrounding predominantly Latino neighborhood. Soccer, walking, spectating, and just simply enjoying the outdoors – coming soon to a neighborhood near you.*

5.

*The MBTA Silver Line will significantly expand the capacity of Boston's transit system by providing improved and new transit service to draw more people out of their cars and into public transportation. Surface street and transit improvements on Washington Street in Roxbury, the South End and Chinatown will be connected to the South Boston Piers Transitway Project by an underground tunnel from New England Medical Center to Boylston Street to South Station. The Silver Line will provide important connections between communities, existing and new job centers, the South Station Intermodal Center and Logan Airport. The two halves of this project – Washington Street service and the Transitway – will be complete in 2002 and 2003 respectively.*

# PROPOSED MBTA SILVER LINE


End to downtown and the South Boston waterfront; and bring the Urban Ring Project, a circumferential transit route connecting Boston and the adjacent urban communities, into the environmental review process.

Logan Airport is one of the busiest in the nation and its operations impact many residential neighborhoods in Boston and surrounding communities. Based on community comments, EOEA is working with Massport on

changes that protect neighborhoods from air pollution through improved transit access, conversion to clean-fuel vehicles, and development of alternative emission reduction programs. A proposed first-in-the-nation system of emissions-based airline charges would reward airlines that use cleaner-burning aircraft in and out of Logan with lower fees.

Air quality is dependent on many sources; addressing idling diesel buses and the engines used by transatlantic aircraft is part, but not all, of the answer. For example, commuter boats produce exhaust just as buses do. The Urban Harbors Institute at UMass/Boston is working with ferry operators and others to explore the use of alternative fuels that will make the air around Boston Harbor cleaner.

It is clear that no one group of people should have to bear disproportionate health risks just because "it's always been that way." An effective environmental justice strategy challenges traditional perceptions and attitudes and develops common goals and creative solutions. Environmental justice calls for innovative approaches to help the communities most burdened by past economic and environmental policy decisions.

*The commuter boat whistle signals the beginning and end of the workday for many Boston area residents. Future commuter boats may be powered by alternative fuels to reduce air pollution.*

*Photo: CZM*

## *ENVIRONMENTAL JUSTICE CHECKLIST: FAIRNESS AND SUSTAINABILITY*

✓ *Created and empanelled the Massachusetts Environmental Justice Advisory Committee.*

✓ *Released a draft Environmental Justice Policy.*

✓ *Provided more than $1.5 million in grants to urban communities for parks in low-income neighborhoods or neighborhoods of color to create better access to open space.*

✓ *Convened the South Boston Transportation Summit to ensure that new waterfront projects address significant transportation capacity issues.*

✓ *DEP and the Registry of Motor Vehicles began a new emissions testing program for 120,000 diesel vehicles, including cars, trucks, and buses – the second state in the northeast to introduce these tests.*

✓ *Received a commitment from state transportation officials to clean up the MBTA fleet by introducing 358 alternative fuel buses.*

## EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS WEB PAGE LINKS

- www.state.ma.us/envir/environmentaljustice.htm
- www.state.ma.us/envir/air.htm
- www.state.ma.us/dep

6.

# BIODIVERSITY

## *THE STATE OF OUR NATURAL COMMUNITIES*

# EXPLORING BIODIVERSITY

*"Participating in Biodiversity Days has been an experience I will never forget. Not only are we learning about nature and science, we're experiencing it. Our teacher talked to us about Biodiversity Days, but this is better than I expected. I never knew all these plants and animals lived here, and never knew the ways they help our lives. The best part is we will be able to study biodiversity all year long and be able to learn about all these organisms."*

*– Sharon High School Students*
*Anu Bhimavarapu and David Chu*

# 6.

*Eager students from Studley Elementary School in Attleboro, gather for Biodiversity Days activities.*

*Photo: EOEA*

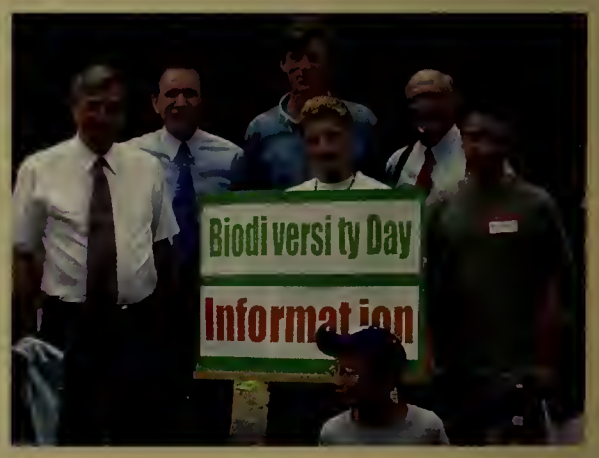
Armed with pencils, pens, paper, and clipboards, a virtual army spreads out across southeastern Massachusetts to record the number of "homes" in each neighborhood and information on "who" lives there. Poking and prodding to get the most intimate information on their subjects, these people might be mistaken for census-takers from the federal government – except that many of these recorders are under twelve years old!

On June 9-11, 2000, while Washington officials tabulated the national census, Massachusetts became the first state in the nation to hold a wide-scale citizen excursion into the outdoors to identify and document biodiversity. Over one weekend, 15,000 adults and school children from 134 cities and towns participated in Biodiversity Days 2000, investigating, identifying, and recording 2,810 individual species.

Biodiversity refers not just to the number of individual plants and animals in a given area, but to the total number of species and the wildlife families to which they belong. Keeping track of biodiversity is very important throughout Massachusetts because it is a measure of the health of the ecosystems on which humans depend. An area is considered "biodiverse" if it sustains multiple species by virtue of a complex but interrelated habitat system. As habitats improve – for example, by having better or more diverse food sources – or degrade through pollution or development, we can keep track of the health of our environment and the life it supports through simple but careful observations.

Events like Biodiversity Days teach people about the degree to which our natural world is interconnected, and the data collected serves a vital function. What is happening in Massachusetts may not seem as dramatic as the destruction of the rain forests, but we, too, are in danger of losing the land with the most significant habitats to development, pollution, or invasion by non-native species. The data collected during Biodiversity Days each year will help guide land protection strategies (see Chapter 8, "Land Protection") across the state.

Biodiversity Days 2000 was hosted by Environmental Affairs Secretary Bob Durand, who was joined by world-renowned biodiversity expert E.O. Wilson of Harvard University, wildlife




*Over 15,000 citizens participated in the first state-sponsored Biodiversity Days June 9-11, 2000. These amateur naturalists helped to identify 2,810 species in their own neighborhoods.*

*Photos: EOEA*

*Peter Alden, author of many field guides, including one for New England, published by the National Audubon Society, was one of the organizers of Biodiversity Days. He originated the Biodiversity Days concept in a town-wide event in Concord, MA, in 1998.*
*Photo: EOEA*

expert and author Peter Alden, and Russell Mittermeir, theExecutive Director of Conservation International. All four individuals, along with more than 100 other experts who volunteered their time, helped to lead groups throughout southeastern Massachusetts. At one point, Dr. Wilson referred to Biodiversity Days 2000 as an "historic event" – and so it was. In 2001, Biodiversity Days will expand to include all of Massachusetts, while other states, and even countries as far away as Armenia, have requested information to help them establish their own Biodiversity Days.

As more and more of our state is developed, precious wetlands, vernal pools, meadows, uninterrupted woodlands, and salt marshes are lost. As these habitats disappear, the ability of our state to support diverse wildlife diminishes. EOEA's three-pronged approach, combining education and information about biodiversity, land protection and restoration, and community preservation is designed to preserve our rich and varied natural communities.

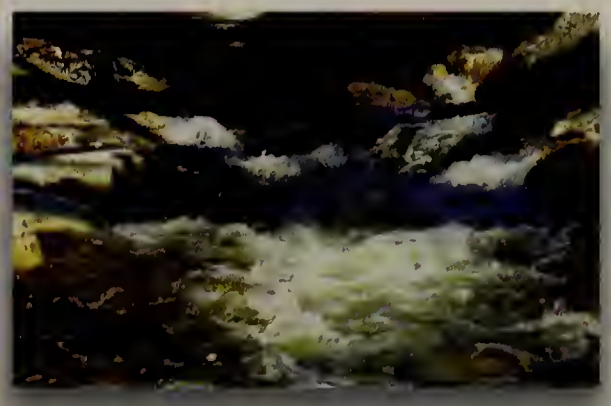
But development is not the only threat to our state's biodiversity. As participants in Biodiversity Days found out, invasive species are an increasing problem in both the land and the water environments. These non-native species arrive here in a variety of ways, including seedlings that attach to human clothing, shellfish that tag along the hull or in the ballast of ocean-going ships, and sometimes by humans who purposely introduce new species to this area without knowing the full ramifications of their actions. While some invasives, like the periwinkle, do not appear to have upset the natural balance, other species, such as purple loosestrife, green crabs, and water chestnuts, have few natural predators in their new homes, and multiply quickly, threatening native species by competing for food and habitat.

Biodiversity Days 2000 was an experiment in environmental education and scientific research that succeeded on both counts beyond our wildest imagination. In one weekend in June, more people found out about the world of bugs, bluebirds, bats, birches, and bitterns than they probably

## *A RIVER RUNS THROUGH IT*

*For 200 years, the Old Berkshire Mill Dam, owned by Crane and Company, stood on the East Branch of the Housatonic River in Dalton. It stood, that is, until November, 2000, when a group of about sixty people, led by Crane CEO Lansing Crane, gathered to literally open the flood gates to biodiversity.*

*The controlled breaching of this dam was the first cooperative River Restore project to be completed by the Department of Fisheries, Wildlife, and Environmental Law Enforcement (DFWELE). The success at the Old Berkshire Mill Dam will likely lead to the removal of other dams that are no longer useful, thereby opening up Massachusetts waterways for fish spawning, recreation, and more natural habitat areas.*



# 6.

ever thought possible. And the information gathered by thousands of people was used to create a massive database that will help conservationists protect and preserve habitat and species.

Making sense of all the information collected during Biodiversity Days and over the years by state wildlife biologists is not an easy task. The BioMap Project sponsored by the Natural Heritage and Endangered Species Program at the Division of Fisheries and Wildlife graphically represents the location of wildlife habitat and natural communities across the state. The database includes 105 natural communities, 300 rare species of plants, 82 rare invertebrates, 250 bird species, and 17 rare reptiles and amphibians, and is designed to be easily used by the general public. The Massachusetts Ocean Resource Information System (MORIS), is a maritime companion to the BioMap Project, and currently has more than 125 data layers, or categories of information.

By better understanding our complex natural environment, all of us are in a better position to preserve and protect Massachusetts' amazing biodiversity.


*The BioMap project is an undertaking by the Massachusetts Division of Fisheries and Wildlife's Natural Heritage and Endangered Species Program to create a biological conservation blueprint for the Commonwealth. The BioMap will identify the areas deemed important to the long-term viability of the most significant elements of biodiversity in the state. The BioMap is based on more than 12,000 site-specific records of rare plant, rare animal, and exemplary natural community locations across Massachusetts, collected over the 22-year history of the Natural Heritage and Endangered Species Program.*

Map: DFW

BIODIVERSITY

## *BIODIVERSITY CHECKLIST: UNDERSTANDING OUR NATURAL WORLD*

✓ *Held first area-wide Biodiversity Days in southeastern Massachusetts.*

✓ *Biodiversity Days 2000 included 134 towns; 700 free nature walks; and 2,810 species observed by over 10,000 school children, 4,000 adults, and 200 specialists, representing one of the largest nature events in the world in the year 2000.*

✓ *Biodiversity Days will be expanded to a statewide program.*

✓ *Collected baseline data for invasive species in the marine environment with an international team of biologists led by MIT Sea Grant, the Massachusetts Bays Program, and the Massachusetts Office of Coastal Zone Management.*

✓ *Completed statewide BioMap project.*

✓ *Crane Company dam removed in Dalton, opening up the East Branch of the Housatonic River for the first time in 200 years.*

### EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS WEB PAGE LINKS

- www.state.ma.us/envir/biodiversity.htm
- www.state.ma.us/dfwele/dfw/nhesp/heritage.htm
- www.state.ma.us/dfwele/river/rivrestore.htm

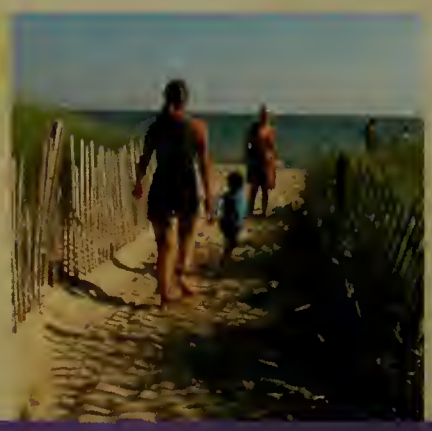
7.

# THE COASTAL ZONE

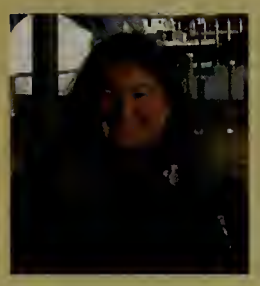
*THE STATE OF OUR*

*BEACHES, HARBORS,*

*AND FISHERIES*



# *ON THE WATERFRONT: SEAS OF CHANGE IN THE BAY STATE*



*"Because of the efforts and approach of our pumpout operator, Dave Brewer, about 10,000 gallons of sewage are kept out of the Three Bays/Centerville Harbor area each summer. Dave makes pumping out so easy and fun that Barnstable boaters don't even have to think about doing the right thing."*

*– Dr. Dale Saad,*
*Barnstable Board of Health*

# 7.

One way to protect coastal waters is to prevent sewage from boats – often untreated or only partially treated – from being discharged directly overboard. Boat sewage is an issue that affects many people directly and indirectly, whether or not they own or use a boat. The impacts of boat sewage can be serious, particularly in shallow bays and harbors, or where tidal influence and natural flushing is minimal. A relatively small amount of boat sewage can seriously degrade water quality,

"I must go down to the seas again, to the lonely sea and the sky, [a]nd all I ask is a tall ship and a star to steer her by...." Add holding tanks (and life jackets) to John Masefield's century-old list of sailing essentials and you've got the makings of a modern-day mariner.

What are holding tanks and why do we need them? We have spent billions of dollars here in Massachusetts to improve water quality in our ponds, lakes, rivers, harbors, and bays. We have made significant progress, particularly with municipal and industrial wastewater treatment facilities. Now we need to follow up on those improvements by looking at all the smaller sources of pollution, which collectively have a big impact.

*There are more and more pumpout boats and dockside pumpout facilities along the Massachusetts coast to dispose of boat sewage quickly and safely.*

*Photo: DMF*

making shellfish unsafe for eating and forcing bathers to stay out of the water.

The best answer to this problem is to equip boats with special tanks that hold boat sewage until it can be safely pumped out and treated at a municipal wastewater facility. Waterfront communities need pumpout facilities and pumpout boats to handle the large number of commercial and recreational boaters who use Massachusetts waters. Thanks to the federal Clean Vessel Act, the Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement, and participating municipalities, $1.6 million was provided in 2000 to purchase and operate equipment and vessels that helped pump out 500,000 gallons of untreated boat sewage – sewage that otherwise would have gone straight into Massachusetts coastal waters.

## *MUNICIPAL HARBOR PLANS: BUILDING THRIVING PORTS*

*A Municipal Harbor Plan (MHP) provides a framework for the future use of a harbor and its waterfront, and guides permitting decisions at the local and state levels. MHPs help communities promote water-dependent uses, preserve public rights in Massachusetts tidelands, and guard against piecemeal development of the waterfront, thereby preserving docking space and shoreside facilities for commercial and recreational fishermen. Through a series of public meetings, citizen input guides the MHP process and often includes spirited debates that move from "contentious to consensus."*

*Following the approval of MHPs in Provincetown and Gloucester in 1999, Secretary Durand reviewed and approved MHPs in 2000 for Hull, Salem, and the South Boston Waterfront. Governor Cellucci, Lieutenant Governor Swift, and Boston Mayor Tom Menino highlighted the importance of the South Boston Waterfront MHP at a signing ceremony in December.*

*Currently, there are seven cities and towns with state-approved municipal harbor plans. It is anticipated that MHPs will be submitted for New Bedford/Fairhaven, Fall River, and East Boston in 2001.*


*Active discussion on the future of our waterfronts indicates a renewed interest in our harbors and our coast. In each MHP that Secretary Durand approved in 2000, a balance between competing interests for limited water-front areas was reached, ensuring the greatest public benefits for the natural environment, the region's economic well-being, and the common good.*

# 7.

Two significant events occurred in 2000 that highlight efforts to control boat sewage. In Boston Harbor, local, state, and federal agencies worked with Sail Boston 2000 to make sure the thousands of spectator boats that assembled to watch the Tall Ships Parade of Sail would not pollute the harbor with sewage. Organized by EOEA's Office of Coastal Zone Management (CZM) and the Division of Marine Fisheries (DMF), harbormasters and marinas throughout the region offered pumpout vessels. Shore-side facilities, including trucks to remove waste collected by the pumpout vessels, were placed in strategic locations. The results? Teams from the U.S. Environmental Protection Agency (EPA) and CZM took numerous water quality samples at key points during the Parade of Sail and found little or no change in bacteria levels. Not only was the Parade of Sail fun to watch – it also proved that pumping out really works.

*Water quality testing during the event showed that pumpout boats really made a difference.*
Photo: Beth Higgins EPA

In southeastern Massachusetts, the Buzzards Bay Action Committee (BBAC), a group of officials from every municipality along Buzzards Bay, worked for months to receive federal approval of a No Discharge Area (NDA) for this 228-square-mile

*A highlight of the summer, the Tall Ships Parade of Sail attracted hundreds of thousands of visitors, many of whom watched from the waterfront or from anchored boats.*
Photo: Patricia Pelczarski

*New Bedford Mayor Fred Kalisz and EPA Regional Administrator Mindy Lubber celebrate the creation of the Buzzards Bay No Discharge Area on August 4, 2000.*

*Photo: Buzzards Bay project*


estuary and its embayments. NDAs are coastal areas where any type of sewage discharge from a boat is prohibited, even if the sewage has been treated. The BBAC worked with the EPA, the nonprofit Coalition for Buzzards Bay, the Buzzards Bay Project, DMF, and CZM to ensure adequate pumpout facilities existed throughout the region to meet federal NDA requirements.

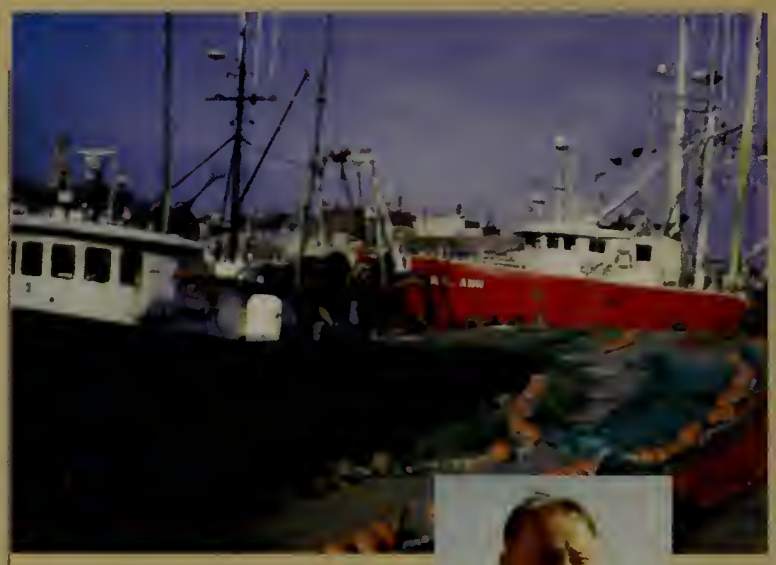
The Buzzards Bay NDA designation was approved on August 4, 2000, and is the sixth, and by far the largest, NDA in Massachusetts waters, but certainly not the last. Efforts are currently underway to create NDAs in Barnstable and for Pleasant Bay on Cape Cod, in the Parker River Estuary on the North Shore, and in other harbors and bays. Our goal is to make all waters along the Massachusetts coast free of boat sewage – and we're getting closer to that goal every day.

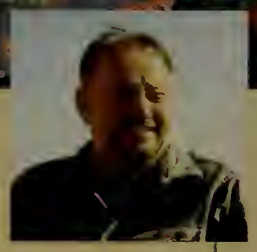

*The 2001 Boston Harbor Marine Debris Cleanup Project collected over 300 barrels of floating trash, making the harbor safer for navigation, better for marine life, and more attractive.*

*Photo: Andi Rierden, Gulf of Maine Times*

# 7.

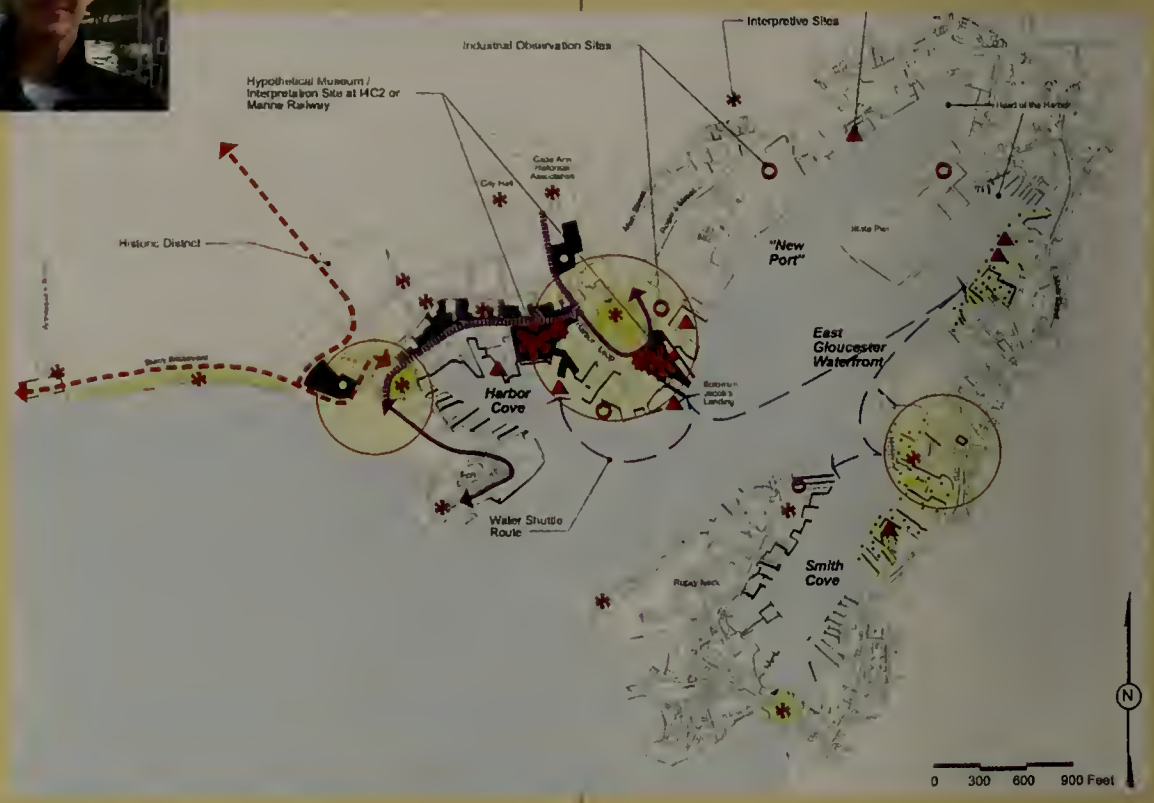
Pumpout boats and holding tanks are not the only change on the Massachusetts waterfront. Many commercial ports are undergoing transformations to revitalize trade and fishing activities – and they are doing so with the environment in mind. When Gloucester Harbormaster Jim Caulkett, Harbor Plan Coordinator Dale Brown, and a local citizen's committee began working with residents on their community's Municipal Harbor Plan (MHP), they looked at what needed to be done to revitalize one of America's most famous ports. Based on comments from residents, maintaining the depth of channels and berthing areas was identified in the MHP as one of the most pressing problems facing the working waterfront. But dredging in an industrial harbor is not easy. Sediment on the harbor bottom may contain various chemical products accumulated over centuries, and moving it to deepen a channel can be harmful to marine organisms.





*The Many Faces of Gloucester: Gloucester's port improvement projects are moving forward with respect for the environment, thanks to people like Dale Brown and Jim Caulkett. Priorities were developed under the City's Municipal Harbor Plan.*

*Photos: EOEA, CZM*




Pumpout boats and holding tanks are not the only change on the Massachusetts waterfront. Many commercial ports are undergoing transformations to revitalize trade and fishing activities – and they are doing so with the environment in mind. When Gloucester Harbormaster Jim Caulkett, Harbor Plan Coordinator Dale Brown, and a local citizen's committee began working with residents on their community's Municipal Harbor Plan (MHP), they looked at what needed to be done to revitalize one of America's most famous ports. Based on comments from residents, maintaining the depth of channels and berthing areas was identified in the MHP as one of the most pressing problems facing the working waterfront. But dredging in an industrial harbor is not easy. Sediment on the harbor bottom may contain various chemical products accumulated over centuries, and moving it to deepen a channel can be harmful to marine organisms.

As soon as the MHP was approved in July, 1999, by Environmental Affairs Secretary Bob Durand, Gloucester lost no time in proceeding with the dredged materials disposal project. With funding from the Seaport Advisory Council, the City continues to work with government agencies and concerned citizens to make sure that any dredging done in Gloucester would have a minimal impact on the marine environment. With other plans to repair seawalls and modernize port infrastructure for the fishing fleet, Gloucester recognizes that a clean environment goes hand-in-hand with maintaining its position as a preeminent port.

Just as Gloucester relies on a clean environment for a vital working waterfront, other communities have made significant strides to improve habitat for shellfish harvesting and aquaculture. Human sewage, animal waste, and roadway runoff containing gasoline and oil are the culprits in the closure of many otherwise productive shellfish beds. DMF, CZM, the Department of Environmental Protection (DEP), and the Department of Food and Agriculture (DFA) worked with local shellfish wardens, harbormasters, and health agents to identify and eliminate sources of coastal

pollution and provided more than $650,000 to municipalities for this purpose in 2000. In addition, CZM will offer a grant program for shellfish wardens and harbormasters to purchase cleaner outboard engines; distribute a new guidance document for environmentally-friendly marinas; and provide free bilge socks to boaters, further reducing gasoline and oil discharges in the marine environment.

Marine debris, including litter, is another area where volunteers and local support have made a huge difference. The Boston Harbor Association, in cooperation with the Gulf of Maine Council, CZM, the Massachusetts Water Resources Authority, Massport, the City of Boston, and the Massachusetts Bays Program, sponsored a pilot project to remove marine debris from Boston Harbor. Over a three month period during the summer of 2000, a clean-up crew picked up more than 300 barrels of floating debris, including wood pilings from piers, plastic cups, and cigarette butts. Cigarette butts also led the trash list for the Massachusetts COASTSWEEP, which is part of an annual international volunteer effort to clean up beaches along the coast.

The waterfront you knew yesterday may now be changing – we hope for the better: cleaner, with better public access, new infrastructure for ports, and pumpout facilities. In Massachusetts, we have learned that the ocean is too important to neglect, and that proper stewardship of coastal resources is essential for our future.

*COASTAL CHECKLIST: CLEANING UP THE COASTAL ENVIRONMENT*

✓ *Approved Municipal Harbor Plans in Hull, Salem, and the South Boston waterfront.*

✓ *Provided $650,000 in coastal pollution remediation grants to municipalities to clean up stormwater runoff.*

✓ *Expanded "bilge sock" pilot program, designed to reduce gasoline and oil discharges from boats, to include the whole coast.*

✓ *CZM and Woods Hole Sea Grant hosted a successful docks and piers workshop as a national pilot for the Coastal Training Initiative.*

✓ *The Seaport Advisory Council, chaired by Lieutenant Governor Swift, approved $5.9 million for harbor improvements in Fall River, Falmouth, Gloucester, New Bedford, Plymouth, Provincetown, Salem, Salisbury, Swampscott, and Westport.*

✓ *Completed Phase I of the Massachusetts Ocean Resource Information System (MORIS) which provides detailed information on the marine environment.*

✓ *80 acres of shellfish beds opened in Ipswich as a result of efforts to reduce pollutants in the marine environment.*

✓ *Governor Cellucci signed the Beaches Bill into law, which requires water quality testing at public beaches.*

**EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS WEB PAGE LINKS**

- www.state.ma.us/czm
- www.state.ma.us/dfwele/com/comcvahm.htm
- www.buzzardsbay.org/
- www.state.ma.us/massbays/

8.

# LAND PROTECTION

*THE STATE*

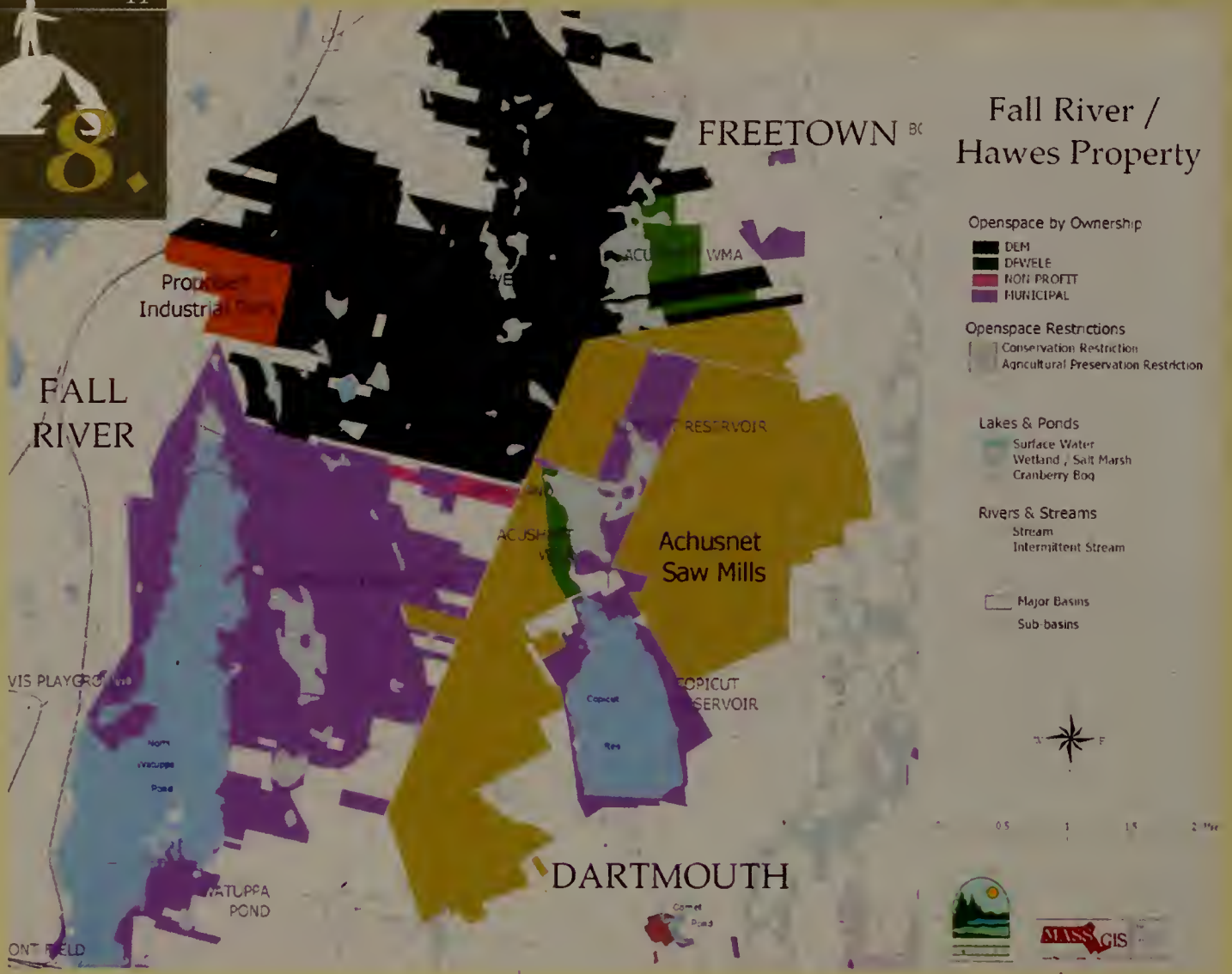
*OF OUR*

*OPEN SPACES*

# PROTECTING QUALITY OPEN SPACE: GETTING TO 200,000 NEW ACRES

*"As suburban sprawl and urban growth accelerates in the cities and towns of Bristol County, the Southeastern Massachusetts Bioreserve will be the last refuge for thousands of species of plants and animals that call this corner of Massachusetts home. Fragmentation of natural communities, destruction of habitats, and loss of species are happening right now, at this very moment, throughout this area."*

– *Everett Castro, Green Futures*




*The creation of the Southeast Bioreserve in the City of Fall River and Freetown marks a major milestone in land conservation for Massachusetts. In the 1920s Charles Elliot II envisioned expansion of the Freetown State Forest as a major priority. With the assistance of the City of Fall River, and The Trustees of Reservations (TTOR), EOEA purchased 3,800 acres from Acushnet Saw Mill and a conservation restriction on 4,300 acres of water supply land. The result is the state's first Bioreserve, covering roughly 15,000 acres and will feature an environmental education center to serve the urban youth of Fall River by TTOR.*

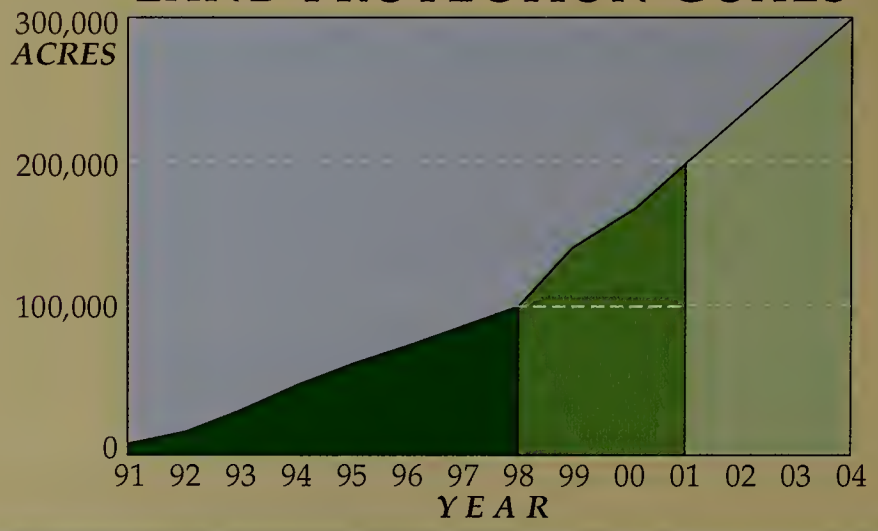
"Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!" Not, perhaps, the advice that Alice wanted to hear in Lewis Carroll's *Through The Looking Glass*, but an appropriate description of what has to be done to protect the Massachusetts landscape. And Governor Paul Cellucci, Lieutenant Governor Jane Swift, and Environmental Affairs Secretary Bob Durand are all off and running double-time to protect open space in Massachusetts over the next few years.

Between 1990 and 1998, the Executive Office of Environmental Affairs protected more than 100,000 acres of open space through direct purchases, grants to cities and towns, and conservation restrictions. Having reached this objective, Governor Cellucci and Lieutenant Governor Swift doubled their effort by establishing a new goal to protect 200,000 additional acres of open space by 2010. We are well ahead of where we expected to be: by summer, 2001, more than 100,000 new acres of valuable land will have been protected since 1998.

The key to EOEA's successful land protection programs is partnerships. We rely heavily on the efforts of local governments, nonprofit organizations, and individual citizens. There are more than 150 nonprofit land trusts throughout the Commonwealth and active open space programs in many communities. The goal is to protect as much high-quality farmland, forest land, parks, trails, and wetlands as possible. State environmental agencies have worked with these partners to create and launch two new programs, the Bioreserves Initiative and the Forest Vision Initiative, and to strengthen and accelerate existing programs that target other valuable open space.

Bioreserves are large, protected areas of approximately 15,000 acres

LAND PROTECTION GOALS



centered on a core area that is particularly rich in diverse species and natural communities. EOEA plans to create a statewide network of five bioreserves, each of which will be individually designed to maximize the long-term protection of natural systems. The key to the success of these bioreserves is designing and managing them to reflect local resource-based economies, with a particular emphasis on working landscapes.

Protecting large tracts of land in a state like Massachusetts is not easy. With the third highest population density among the fifty states, development pressures and competing uses for open space areas are high. According to the Massachusetts Audubon Society, 44 acres of open space are lost to development every day across Massachusetts. Sprawl is leading to fragmentation of natural communities, threatening some of our most distinctive species and the habitats on which they depend. Partnerships and co-management strategies among state agencies, local governments, and nonprofits are essential to turn the concept of bioreserves into reality.

On June, 21, 2000, Secretary Bob Durand, Fall River Mayor Ed Lambert, and The Trustees of Reservations announced the creation of the first Bioreserve in the Commonwealth: a 14,000 acre area located ten minutes from downtown Fall River, protecting 8,000 acres of new open space that adjoins existing state lands. With one of the highest growth rates in the state, southeastern

*PARTNERING TO PROTECT OPEN SPACE IN THE NORTH QUABBIN*

*Since the Quabbin Reservoir was built in the 1930s, an open space buffer has protected its clean water and provided habitat for wildlife and recreational opportunities for the public. Just to the north of the Quabbin, new opportunities exist in the Tully Valley to expand this remarkable preserve in Central Massachusetts.*

*The largely rural Tully Valley is characterized by many small land owners, where the forestry industry, hikers, hunters, and the local population have coexisted for years. But recent development has brought change, and traditional open space areas are under increasing threat. Several years ago, the Mount Grace Land Trust, the New England Forestry Foundation, Harvard Forest, the Nature Conservancy, and state environmental agencies began looking at possible protection strategies and realized that traditional land conservation methods were not enough. The problem: how to get many land owners to agree to common open space protection principles.*

*What emerged was a partnership to use cost-effective conservation restrictions to protect land from development while simultaneously encouraging traditional forestry activities to support and stimulate the local economy. The Tully Valley became the pilot project for Secretary Durand's rapid landscape conservation approach, an initiative that represents one of the many land acquisition tools developed to promote the bioreserve concept. By using state funds through the Department of Environmental Management and the Department of Fisheries, Wildlife, and Environmental Law Enforcement, and by teaming with local partners like the Mount Grace Land Trust, the goal of the Tully Valley Project is to protect 5,000 acres of this large unbroken forest and continue its traditional uses. In fact, by working together, the Tully Valley Project partners have found that they have a lot in common, and that the sum of their efforts is far more than what each could accomplish on its own.*



*Status 1997*

# BOSTON 2000 PLAN

*Development of Open Space and Structures in Central Artery Air Rights*

*When completed, the 27 acre Central Artery Surface Restoration will transform the heart of downtown Boston with a series of vibrant parks and open spaces for residents, workers and tourists. This unprecedented opportunity was created as part of the environmental review of this project. EOEA continues to work with the Mass. Turnpike Authority, the City of Boston, and other partners to ensure the vision is realized.*

Massachusetts is rapidly losing forests, farms, and the land used to protect cranberry bogs. This new bioreserve will allow many species to thrive and will protect ecological integrity, while at the same time supporting natural resource-based local industries.

Complementing bioreserves is the Forest Vision Initiative. The Initiative provides mechanisms and strategies to help public and private land managers maintain biological diversity while also valuing the recreational and economic potential of Massachusetts forest lands. The Initiative promotes more cohesive management strategies, encourages creative approaches that result in cooperation across property boundaries and state lines, and ensures the permanent protection of more forestlands. Although 62% of Massachusetts is forest, these lands are under constant threat from development, which consumes and fragments our remaining green spaces.

The Forest Vision Initiative consists of three main components:

1. A review of current forest management activity on state land that supports biological diversity and serves as a benchmark for forest management in the Commonwealth;

2. Implementation of a new land acquisition program, the Private Forest Lands Program. The program is specifically directed towards the purchase of conservation restrictions which permanently protect open spaces while allowing timber harvesting that is sensitive to maintaining biological diversity; and

3. The protection of forest lands that are contiguous to existing state holdings combined with acquisitions of vulnerable or fragile areas to prevent further fragmentation of the state's forests.


Bioreserves and the Forest Vision Initiative provide two new ways to look at land protection. They enhance rather than replace more traditional strategies that protect greenways and trails, provide grants for urban parks and playgrounds, and add to existing state parks and reservations. In addition, the state, with other partners, continues to work on one of Massachusetts' most ambitious open space projects: the 27-acre Central Artery Surface Restoration. When completed, this project will transform downtown Boston, creating a series of parks on the surface of the depressed Central Artery.


*On February 16, 2001, Lieutenant Governor Jane Swift awarded the final payment for an Agricultural Preservation Restriction to John Cable, the owner of Burnt Hill farm. Located on a mountain-side in Heath, Burnt Hill farm is a "pick your own" blueberry farm covering 75 acres, and features fantastic views of Massachusetts, Vermont, and New York. By purchasing the development rights on Burnt Hill, the Department of Food and Agriculture, with help from the Franklin Land Trust and Mr. Cable, has protected a valuable agricultural resource for future generations.*

*Photo: EOEA*

The number of nonprofit organizations committed to land protection and the large amounts of public funding at the state and local levels testify to the popular support for open space in Massachusetts. But we cannot be content to conduct business as usual where open space is concerned. Open space is a finite commodity that is nearly impossible to retrieve once gone. We must work double-time to hold our ground. Our urgency is dictated by the realities of time – and time is running out.

## *OPEN SPACE CHECKLIST: CONSERVATION STRATEGIES FOR THE NEW MILLENIUM*

✓ *Developed new strategies for protecting open space, including Bioreserve Protection and the Forest Vision Initiative.*

✓ *Approved conservation restrictions on more than 7,401 acres of land, the majority of which are held by land trusts and conservation commissions – a one-year record.*

✓ *Protected more than 3,597 acres of working farmland through the Department of Food and Agriculture's Agricultural Preservation Restriction (APR) program.*

✓ *Expanded the Department of Environmental Management's Wachusett Mountain State Reservation in Westminster and Princeton by 200 acres.*

✓ *Expanded 269 acres at the Division of Fisheries and Wildlife's Haskell Swamp Wildlife Management Area in Rochester and Mattapoisett.*

## EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS WEB PAGE LINKS

- www.state.ma.us/envir/openspaceprotection.htm
- www.state.ma.us/dcs/dcs.htm

2.

*The bold sentences below are the goals EOEA set for state government action in last year's* The State of Our Environment *report. Each goal is followed by the actions state government took in the last year to address the goals.*



# WHAT HAS BEEN DONE BY STATE GOVERNMENT

**Prepare and distribute a buildout map and analysis for each community to promote local decision-making.**

- EOEA has contracted with the 13 Massachusetts Regional Planning Agencies (RPAs) to produce buildout maps and analyses for all Massachusetts communities by June 30, 2001. EOEA and RPA staff are presenting these maps and analyses to local officials of each community.

**Continue to hold Preservation Summits to discuss buildout analyses and regional implications of growth.**

- EOEA held more than 20 Summits to introduce communities to the Community Preservation Initiative and growth issues. By June 30, 2001, EOEA will also have held five SuperSummits designed to help communities plan for future growth on an intercommunity basis.

**Implement Executive Order 418 by assisting communities in preparing Community Development Plans.**

- EOEA, the Department of Housing and Community Development (DHCD), the Executive Office of Transportation and Construction (EOTC) and the Department of Economic Development (DED) released a 95-page guidebook, *Building Vibrant Communities: Linking Housing, Economic Development, Transportation and the Environment*, designed to help communities create Community Development Plans pursuant to Executive Order 418.

**Through MEPA review and DEP funding and permitting, ensure that new water, wastewater, and transportation investments are consistent with local and regional plans for growth and open space preservation, pursuant to Executive Order 385.**

- The Lowell Regional Transit Authority is redeveloping a 6.5-acre abandoned electroplating facility that will serve as a bus maintenance and operations center. This transit oriented brownfield redevelopment project advances the goals of Executive Order 385 and Community Preservation.

**Encourage streamlined MEPA review and DEP permitting of projects in brownfields, downtowns, and other appropriate growth areas, when consistent with local and regional plans.**

- Kerr Mill in Fall River will be renovated to house a new Advanced Technology Center for UMass/Dartmouth.
- In Worcester, the Main South Community Development Corporation is working on a project to build a new facility for the Boys and Girls Club along with outdoor playing fields - all on a remediated brownfields site.
- Several cities are in the process of developing brownfields into affordable housing, including Lawrence, Lowell, Lynn, Salem, Williamstown, and Haverhill.

**Provide funding and technical assistance for brownfields projects.**

- Pursuant to the Brownfields Redevelopment Act, MassDevelopment distributed $2,681,646 in site assessment loans and $2,332,300 in remediation loans to qualified developers.

**Locate new state facilities in existing historic buildings or infill sites in downtowns and town centers.**

- Work is underway to restore and relocate the Department of Public Health to the Ferdinand Building, an historic structure in Roxbury.

**Start up the Massachusetts Heritage Landscape Inventory in southeastern Massachusetts to provide a model for statewide efforts.**

- DEM has initiated the Massachusetts Heritage Landscape Inventory Pilot Projects to provide direct technical assistance to municipalities to identify, document, and evaluate any existing heritage landscapes.

**Provide technical and financial assistance to farmers, including DFA's Farm Viability and Agricultural Preservation Restriction (APR) programs.**

- The Farm Viability program spent $1.7 million last year to protect 2,280 acres of farmland and help farmers become more efficient business operators. An additional $200,000 went to the new Cranberry Viability Program.
- The APR program spent $6.8 million to acquire restrictions on 33 farms in 20 towns, protecting 3,597 acres of farmland.

COMMUNITY PRESERVATION

## 2. WHAT SHOULD BE DONE IN 2002

- Provide a GIS-based planning tool to all cities and towns to help them with their local buildout GIS project.
- Provide analyses to explore alternative development scenarios and better understand their fiscal and environmental impact.
- Improve information outreach about growth issues through The Community Preservation Press, a bi-monthly electronic newsletter.
- Enhance the Community Preservation website and provide web access to local buildout products, including GIS projects, analysis information, maps, and local photographs.
- Submit Open Space Bond Bill to the Legislature to assist planning efforts and help acquire additional open space statewide.
- Hold citizen forums to encourage intercommunity cooperation in addressing growth issues.

WATERSHEDS

## 3. WHAT HAS BEEN DONE BY STATE GOVERNMENT

**Improve our ability to monitor water quality statewide to identify sources of pollution.**

- DEP, through the Massachusetts Watershed Initiative (MWI), is hiring five water quality monitoring coordinators to work with EOEA Watershed Teams and watershed associations that are working on the Five-Year Watershed Cycle.
- EOEA is disbursing an additional $100,000 for volunteer water quality monitoring to support EOEA's new Lakes and Ponds Action Strategy.

**Complete watershed assessments for all 28 watersheds by 2003, and complete watershed plans for all 28 watersheds by 2004.**

- EOEA is conducting Watershed Assessments in the following watersheds in 2001: Cape Cod, Narragansett Bay/Mt. Hope Bay, Boston Harbor, Parker, Merrimack, and French/Quinebaug.
- EOEA has completed Watershed Assessments for the following watersheds: Blackstone, Nashua, Chicopee, Connecticut, Ten Mile, Charles, North Coastal, and Hudson/Housatonic.
- EOEA is developing Watershed Plans in the following watersheds in 2001: Blackstone, Nashua, Chicopee, and Connecticut.
- EOEA has completed Watershed Plans for the following watersheds: Boston Harbor, Ten Mile, Charles, North Coastal, and the Hudson/Housatonic.

**Develop and implement programs to reduce pollution from stormwater and other nonpoint sources.**

- DEP has dedicated a full-time stormwater coordinator to implement the stormwater management policy and the new federal stormwater regulations.
- CZM provided $650,000 in grants to communities for stormwater remediation.

**Complete TMDLs for all watersheds not meeting state water quality standards.**

- DEP, with support from the Watershed Teams, has completed 81 Total Maximum Daily Loads (TMDLs) for waterbodies located on the state's 303d list.

**Restore 3,000 acres of inland and coastal wetlands by 2010.**

- Last year, the Massachusetts Wetlands Restoration Program (MWRP) helped restore some 92 acres of previously compromised wetlands, adding to the 120 acres restored in previous years.

**Reopen key sections of Massachusetts rivers to a free-flowing condition by breaching or removing dams.**

- As the first completed project under EOEA's River Restore program, Crane and Company removed a dam on the East Branch of the Housatonic River in the Town of Dalton, opening several miles of river habitat to migrating fish populations.

# 3. WHAT SHOULD BE DONE IN 2002



- Work with communities to complete watershed-wide Open Space Plans for the entire Commonwealth, which link local land conservation priorities across municipal boundaries.
- Use the state Biomap to prioritize sensitive areas and energize communities to work together to protect open space.
- Implement an interstate watershed restoration grant program for watershed organizations and municipalities to improve rivers and coastal areas.
- Work with municipal public works departments and technical high schools to construct and install watershed awareness signs along rivers in every community in the Commonwealth.
- Fund three to five demonstration projects to protect and restore lakes and ponds. These projects will serve to showcase effective management techniques and local stewardship.
- Develop new training programs for local governments and local groups working to protect and restore lakes, ponds and their watersheds.
- Target land acquisition and protection efforts at lakes, ponds, and their watersheds.
- Improve regulations and policies related to the protection and restoration of lakes, ponds, and their watersheds.

# 4. WHAT HAS BEEN DONE BY STATE GOVERNMENT



**Implement DEP efforts to reach the numerous small sources of pollution by replacing permits with performance standards and self-certifications, backed by audits, inspections, and enforcement.**

- DEP's Environmental Results Program (ERP) is an environmental compliance self-certification program for small businesses. To date, more than 2000 facilities are participating in the ERP from three sectors: dry cleaning, photo processing, and printing.

**Focus on source reduction and reducing the toxicity of the waste stream.**

- EOEA, in partnership with UMass, has created a first-in-the-nation Product Stewardship Institute at the Lowell campus. This institute is a national focal point for interstate efforts to work with product manufacturers to support the shift from disposable products to long-lasting, non-toxic, reusable, sustainable products.
- EOEA's Office of Technical Assistance (OTA) and UMass kicked off a "Green Chemistry" initiative with a March conference at the Boston campus to promote the design of environmentally benign products and processes.

**Strengthen the TURA program to promote continued environmental improvement.**

- In early 2001, the Toxics Use Reduction Act (TURA) program reported that Massachusetts industries had cut toxic byproduct generation by 57%, surpassing the 10-year goal of halving such byproducts. Industry also reduced the use of toxics by 41 percent and toxics emissions by 87%.
- OTA began a first-in-the-nation "Environmental Insurance Incentives" program to allow manufacturers to take advantage of their Toxics Use Reduction efforts to achieve reductions or discounts in liability insurance premiums.
- DEP introduced an Environmental Management Systems enforcement policy for business, to promote continuous environmental improvement.
- The Strategic Envirotechnology Partnership (STEP) provided business and technical assistance to more than 95 companies leveraging $14.70 for every dollar of STEP funds expended, and conducted 30 research projects to develop new technologies.

**Continue to progress toward Solid Waste Master Plan goals by increasing recycling and reducing waste generation and diposal.**

- Recycling is now available to 85% of the population in Massachusetts, with 78% having access to curbside recycling.
- Massachusetts' municipal recycling rate reached 38% in 1999, more than triple the 1990 rate.
- DEP issued a Beyond 2000 Solid Waste Master Plan that set a new, aggressive strategy to reach a total waste reduction goal of 70% by 2010, including a ban on the disposal of unprocessed construction and demolition waste starting in 2003.

- Through fiscal year 2000, DEP grants have supported the start-up of a range of municipal permanent collection programs including 85 used oil/automotive products centers, 80 surplus paint programs, 52 collection programs for mercury items, and 5 comprehensive household hazardous waste centers.
- DEP initiated a ban on the disposal of Cathode Ray Tubes. During the first nine months of the ban, municipalities recycled more than 69,000 television sets and computers with support from DEP grants.

**Develop and implement an Environmental Justice Initiative that considers potential cumulative health and environmental impacts, and seeks to address the needs of urban communities more effectively.**

- EOEA released a draft Environmental Justice Policy that reaffirms the right of all Massachusetts residents to a healthful environment and promotes sustainable development in communities bearing environmental burdens.
- EOEA granted nearly $1.5 million to urban communities to build parks, providing access to open space in communities of color and low-income communities.

**Develop and implement a comprehensive strategy to eliminate the use and release of mercury and other highly toxic or bioaccumulative chemicals.**

- As a result of DEP's Municipal Waste Combuster Rule, solid waste incinerators were upgraded to meet the most stringent mercury standard in the nation, and all five facilities developed and supported source reduction plans to get mercury out of the waste stream.
- The Massachusetts Zero Mercury Strategy was released, launching a multi-agency effort to eliminate the use and release of mercury, with an interim goal of 75% reduction by 2010. EOEA has devoted more than $1 million to take immediate steps to achieve a 50% reduction in mercury emissions by 2003.
- EOEA and the Massachusetts Dental Association signed an agreement to work together to eliminate the release of mercury from dental facilities. More than 1200 pounds of mercury has already been collected from dental offices.

**Begin a Clean Schools Initiative to ensure that schools maintain a safe, healthy environment for learning. Assist DPH in developing an environmental management handbook for school personnel. Pass new legislation to reduce or eliminate pesticide use in and around schools.**

- Governor Cellucci signed the Children's and Families' Protection Act (CFPA) to protect children from the risks of pesticides used in all private and public schools, daycare centers, and school age child care programs.
- EOEA continued its work on the Multi-Agency Task Force for Schools, a federal, state, and local agency initiative to focus resources on the correction of environmental and health and safety problems, and to promote the start-up of environmental management systems in schools across the state.

**Build upon the success of the Clean State Initiative to promote state agency environmental management systems and enhance state purchase of green technologies and products.**

- The state invested nearly $250 million over the past seven years to address more than 4000 environmental issues on 1000 state-owned properties, including state agencies, hospitals, laboratories, higher education institutions and authorities, bringing them into compliance with environmental regulations.
- To maintain this environmental progress, state environmental officials introduced the fundamentals of the Environmental Management System (EMS) to all state agencies.
- Last year, state agencies and municipalities spent $65 million on products and materials made with recycled content – up from $2.8 million in 1992.


## WHAT SHOULD BE DONE IN 2002


- Continue efforts to implement the Zero Mercury Strategy.
- Focus on efforts to promote environmental sewardship.
- Initiate a State Sustainability Initiative to integrate sustainability principles and environmental values into the way state agencies and municipalities, including schools, conduct business.
- Launch a comprehensive statewide recycling education and outreach campaign.

# 5. WHAT HAS BEEN DONE BY STATE GOVERNMENT



**Expand efforts to measure, evaluate and reduce the impact of air pollution on public health and the environment, including regional efforts to address acid rain, smog and mercury.**

- Continued to monitor air pollutants in the Commonwealth. DEP issued its annual Air Quality Report, which can be found at www.state.ma.us/dep/bwp/daqc.
- As part of our regional acid rain and mercury initiatives, EOEA is working to expand the environmental monitoring of fish, wildlife, and sediments, and to expand deposition monitoring network projects.

**Complete and implement the Climate Change Action Plan.**

- EOEA is finalizing the draft Climate Change Action Plan to be released in the spring of 2001.
- EOEA participated in planning for the New England Governors' and Eastern Canadian Premiers' climate change conference in March, where participants developed an action plan that will be reviewed at the 2001 Annual Meeting.

**Implement environmental provisions of utility deregulation to ensure cleaner energy production and efficient energy use.**

- Issued draft regulations requiring the comprehensive cleanup of the state's oldest, most polluting power plants.
- Governor Cellucci appointed Secretary Durand Co-Chair of the Massachusetts Renewables Trust Fund Advisory Group. The group has developed a strategic plan to fund projects that promote alternative energy sources, such as wind power, fuel cells, and alternatives in schools.
- The Division of Energy Resources (DOER) is prepared to release draft regulations for the Renewables Portfolio Standard that requires utility retailers to provide a portion of power from new, renewable energy sources.
- DOER issued a report on the extent to which energy markets are contributing to statewide energy efficiency goals and the development of competitive energy efficiency products and services.

**Encourage the transition of state vehicle fleets, including the MBTA, to clean fuel technologies, and the retrofitting of existing diesel buses to reduce particulates.**

- The MBTA ordered 183 compressed natural gas (CNG) buses to be operated in transit dependent, urban areas. These vehicles will replace the oldest buses in the MBTA fleet and are part of a larger effort to provide 358 new clean buses.
- The Central Artery/Tunnel (CA/T) Project has expanded its diesel construction retrofit program and the MBTA has initiated a similar program for its construction projects.

**Expand the Clean State Initiative and utilize the MEPA review process to promote green building strategies.**

- MEPA has required all projects at state facilities to consider green building strategies and certification by the US Green Building Council as part of the environmental review process. Such projects include the Boston Convention and Exhibition Center and two projects at Logan Airport (Delta Terminal A and American Airlines Terminal B). MEPA also encourages private developers to install green technology in new projects, such as the new stadium under construction for the New England Patriots.

**Implement a program to maintain and provide incentives to reduce emissions at Logan Airport.**

- Massport has initiated a consultant study to reduce emissions at Logan Airport. The consultant is looking at ways to accomplish this goal, including promoting mass transit for consumers using the airport, encouraging clean fuels for vehicles in use at the airport, and developing an Emissions Based Landing Fee Program that would charge higher landing fees for more polluting airplanes using Logan.

# 5. WHAT SHOULD BE DONE IN 2002



- Finalize and implement the Climate Change Action Plan to demonstrate that states can do their part in reducing the release of greenhouse gases.
- Incorporate fuel efficiency improvements into state fleet purchases and consider expanding to clean vehicle programs.
- Update Zero Emission Vehicle (ZEV) requirements to reflect state-of-the-art, clean car technologies.
- Continue monitoring and begin planning for compliance with the EPA eight-hour ozone standard.
- Continue efforts to reduce pollution from diesel off-road equipment.

# 6. WHAT HAS BEEN DONE BY STATE GOVERNMENT

BIODIVERSITY

**Initiate the statewide BioMap project.**

- EOEA completed an intensive statewide mapping project to identify significant rare species habitats, exemplary natural communities, and associated ecologically important areas.

**Create a statewide system of bioreserves, starting with ecoregions most under stress.**

- Working with municipal and private partners, EOEA created the first Massachusetts Bioreserve in Fall River. The preservation of 14,000 acres was a cooperative project between state conservation agencies, The Trustees of Reservations, local environmentalists, and the City of Fall River.
- EOEA is undertaking similar efforts to protect large tracts of land in other regions of the state, including the North Quabbin area and the Berkshire Plateau.

**Establish an interagency committee to develop a strategy for the control of invasive species, and to screen proposed releases of invertebrates for biological control.**

- EOEA established the Invasive Species Council. The council has working groups addressing plants, invertebrates, and biocontrols.

**Through the Forest Vision Project, develop and implement a statewide biodiversity-based Forest Management Plan.**

- With the release of the Forest Vision plan in October, EOEA set a course to aggressively protect the Commonwealth's 3.1 million forested acres (62 percent of the state's total area) in both public and private hands. The Forest Vision initiated a review of current forestry management practices in the Commonwealth.

**Start a fund to purchase timberland conservation restrictions.**

- EOEA has purchased conservation restrictions on timberland totaling 5,952 acres, including the Hull-Peck lands in and around Wales, Massachusetts. These purchases preserve the economic value and jobs associated with the forest products industry while ensuring that the land will be maintained for biodiversity and wildlife management values.

**Publish A Citizens Guide to Biological Diversity.**

- For Biodiversity Days 2000, EOEA published and distributed 5,000 copies of *Exploring Biodiversity* to schools and citizen participants in more than 50 communities in southeastern Massachusetts. In bringing the annual biodiversity survey statewide, EOEA will triple the workbook distribution for Biodiversity Days 2001.

# 6. WHAT SHOULD BE DONE IN 2002

BIODIVERSITY

- Promote incorporation of biodiversity and ecosystem health considerations in every day decision-making regarding our use and management of natural systems.
- Work with the Department of Education on implementing a statewide biodiversity curriculum in K-12 schools that directly correlates to the state's education curriculum frameworks.
- Continue to build a constituency for biodiversity through environmental education and outreach to the public, particularly through EOEA's annual Biodiversity Days.
- Implement a statewide Biodiversity Days event, where citizens of all ages investigate and catalogue the local biodiversity in their towns and watersheds.
- Protect and restore ecosystems through land protection and ecological restoration projects.
- Establish a Lakes and Ponds Invasive Response Team to identify new infestations of invasive plants and eradicate these infestations before they take hold.

# 7. WHAT HAS BEEN DONE BY STATE GOVERNMENT



**Establish the Coastal Institute to provide ongoing environmental training to public and private sector coastal managers.**

- A November workshop on The Science and Management of Docks and Piers served as the pilot for the Coastal Training Initiative (formally the Coastal Institute). CZM anticipates the formal Institute kick-off in the fall of 2001.

**Support local and regional efforts to minimize nonpoint source water pollution and coastal debris.**

- Massachusetts is on the verge of having a federally approved Coastal Non-Point Pollution Plan developed by CZM, DEM, DFA, DEP, MassHighways, and others.
- CZM produced a guide for marinas outlining recommended best management practices. Workshops are scheduled for early spring, 2001.
- The Boston Harbor Association, CZM, Massport, the City of Boston, Mass. Bays Program, and the Massachusetts Water Resources Authority developed a pilot project to collect marine debris in Boston Harbor.

**Recommend the designation of Buzzards Bay as a No Discharge Area (NDA) for boaters, and support efforts to establish NDAs in other coastal waters.**

- In August, 2000, the federal Environmental Protection Agency (EPA) designated Buzzards Bay as an NDA. EOEA is supporting designation in Barnstable, Manchester, Pleasant Bay, and other areas.

**Promote coastal access through land acquisition, protection of historic rights of way, and incentives to donate coastal land for public access.**

- DEM, CZM and the Massachusetts Audubon Society worked together to acquire Allens Pond, a biologically rich coastal pond and barrier beach complex in South Dartmouth. CZM, DEM, DFA, and local conservation groups continue to work on protecting other coastal properties.

**Develop an inventory and guidebooks for the public on coastal access sites.**

- Volume One of CZM's *Coast Guide*, covering the North Shore and Boston Harbor, will be available in the summer of 2001. This popular guidebook includes maps and facility information on all publicly available coastal access locations.
- DMF published 35,000 copies of the *Massachusetts Saltwater Sport Fishing Guide*. The Public Access Board also produced a revised edition of *Public Access to the Waters of Massachusetts*, which identifies boat launching facilities statewide.

**Promote a fisheries management approach for our offshore and nearshore fisheries grounded in economic, biological conservation, and ecosystem protection.**

- DMF developed an alternative fisheries management program for dogfish that advances a balanced approach to sustainable fisheries management.
- DMF, through its collaborative efforts with the Atlantic States Marine Fisheries Commission's interstate fisheries management program, assisted in the development and implementation of comprehensive, balanced fisheries management plans (including horseshoe crab, lobster, scup, fluke, and striped bass).
- DMF supported the development of a fisheries management program for sea scallops on George's Bank that resulted in lucrative catches for the New Bedford scallop fleet.

**Support CZM's Shellfish Clean Waters Initiative to open shellfish beds in cities and towns.**

- As part of the Shellfish Clean Waters Initiative (SCWI), CZM and DMF have focused efforts on eight sites requiring water quality remediation in order to improve shellfish classification. In 2001, DEP and CZM have directed water quality grant funds at three of these sites. DMF has recently upgraded the classifications for selected areas in Ipswich, one of the eight sites included in the SCWI.

# 7. WHAT SHOULD BE DONE IN 2002

- Reduce the discharge of petroleum products into the marine environment by providing grants to coastal communities for cleaner four-stroke outboard motors and distributing free oil-absorbing "bilge socks" to boaters.
- Provide assistance through the Seaport Advisory Council and CZM to improve port facilities and navigation channels in an environmentally sensitive manner.
- Work with coastal communities interested in adopting a Conservation Subdivision Design bylaw (see www.mapc.org).
- Consider options to expand the bioregions concept to subtidal areas by extending protection in state Ocean Sanctuaries.
- Develop a Division of Marine Fisheries artificial reef policy to guide the siting and management of a variety of experimental reefs.



# 8. WHAT HAS BEEN DONE BY STATE GOVERNMENT

Carry out Governor Cellucci's goal to Protect an additional 100,000 acres by 2002 and a total of 200,000 additional acres by 2010.

- Since October of 1998, when Governor Cellucci announced the new land conservation goal, EOEA and its agencies have protected more than 75,000 acres. EOEA is negotiating projects to reach the 100,000 acre milestone by summer, 2001.

Building on the recommendations of the 1998 "Borderland" report, develop a new open space bond bill.

- The development of the new open space bond bill is underway and is being formulated to advance the mission and priority initiatives of EOEA and our agencies.

Target open space acquisition and other protection measures to protect watersheds, biodiversity, historic landscapes, and working farms and forests.

- EOEA has identified six focus areas for land conservation across the Commonwealth to better target resources. The purpose of the focus areas is to make large-scale progress in achieving land conservation that protects water resources, historic landscapes, working farmland, and forests.

Preserve, revitalize, and expand urban parks, including the Boston Harbor Islands, the New Charles River Basin Parks, the new Central Artery parks, and the Metropolitan Park System.

- EOEA will spend $1 million through the Metropolitan District Commission (MDC) for land acquisition in the Saugus River Focus area, one of the six focus areas. EOEA remains committed to the protection of the Boston Harbor Islands, the new Charles River Basin Parks, and the planned Central Artery parks.

Pass the Community Preservation Act to provide funds for local land protection efforts.

- Governor Paul Cellucci signed the Community Preservation Act on September 14, 2000. In March, voters in the towns of Bedford and North Andover adopted the Act. Many other communities across the Commonwealth are considering the act as well.

Urge Congress to reauthorize the Land and Water Conservation Fund.

- Despite the strong advocacy of Secretary Durand at the national level, Congress did not pass the Conservation and Reinvestment Act (CARA). Congress did pass two appropriations bills last year providing approximately $1.1 billion in additional funding, although this new revenue is subject to annual appropriation and therefore not guaranteed. EOEA will work to urge Congress to re-file CARA as submitted during the previous session (106th Congress).

Strengthen Article 97 protections.

- Secretary Durand testified before the Legislature in March in support of state Senator Pam Resor's bill to strengthen Article 97 procedural protections. Getting this bill signed into law remains a priority.

Inventory public lands not protected by Article 97.

- EOEA land policy staff is working to build an inventory of unprotected state agency land with conservation value. Initial discussions with several state agencies have taken place regarding the permanent protection of state land.

Make broader use of Areas of Critical Environmental Concern (ACECs) to develop protection and management strategies for larger areas and regions.

- Secretary Durand has approved the designation of the Miscoe, Warren, and Whitehall Watershed Resource Area, located in portions of the municipalities of Grafton, Hopkinton, and Upton, as an ACEC.

THE STATE OF OUR OPEN SPACES

# WHAT SHOULD BE DONE IN 2002

- Work on the completion of a statewide Land Conservation Plan as a joint vision among land conservation stakeholders.
- Reach the halfway mark of the Cellucci/Swift Administration's goal to protect an additional 200,000 acres by 2010.
- Assist communities in completing open space plans on a watershed level to address inter-community issues.
- Work towards the conservation of 50,000 acres of farmland protected by Agricultural Preservation Restriction Program.
- Implement land acquisition strategies on a landscape scale to protect biodiversity, working farms and forestlands, as well as water resources.
- Strengthen adherence to Article 97 protections on land held for conservation and recreation purposes.
- Advance innovative land protection approaches to enable landowners to maintain their land as open space.

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